THE

SOUTHERN AGRICULTURIST.

NOVEMBER, 1836.

PART I.

ORIGINAL COMMUNICATIONS.

Cotton Crops of this year.

From intelligence received from various sources, the cotton crops of this year are represented as very short throughout the State. The excessive rains during the earlier part of the season, in some portions of the country, and their continuance during a later period on the sea islands, have rendered both the long, and short cotton crops, much shorter than they were last year. From a report recently read before the Agricultural Society of Edisto Island, it appears that the cotton crops of that place will not yield this year more than ninety-five pounds to the acre. This average has been made after visiting most of the plantations on the island. The committee who drafted the report above alluded to, among other matters have furnished us with the following interesting items:—

On the plantation of William G. Baynard, Esq., they were forcibly struck with the difference in effect, between compost manures, decomposed and undecomposed. To the former they gave the decided advantage, for the following reasons:—

I. It gives the cotton a more rapid growth in the earlier part of the season, and consequently enables it to mature its under fruit; and

II. From having exhausted itself at that stage of the growth of the plant, it does not, like unfermented

manure, give a second growth in the later part of the season.

On the plantation of Cato A. Becket, Esq., the attention of the committee was drawn to the effect of marsh-mud upon land which was like to "blue." That gentleman stated to the committee that the application of one cart-load of marsh-mud to the task row, had very effectually prevented the appearance of this disease, where it had always prevailed to the destruction of the cotton. Mr. B. has frequently tried the experiment, and has generally found it effectual.

On the plantation of Dr. J. D. Townsend, the committee saw the best crop of cotton on the island. Dr. T. had planted five acres to the hand, and was enabled to attend his crop and keep it free from grass, by the use of the Skimmer or Townsend plough. The facilities which this plough afforded in the accomplishment of labour, were never better illustrated than on Dr. T.'s plantation. His lands were very much infested with joint and rich grasses, and without the aid of this plough he is convinced, that he could not have properly attended more than four acres to the hand.

In addition to the remarks made in the report, the substance of which we have just given, we would state that we attended the meeting of the Society at which the report was read, and personally conversed with several experienced planters of that island, in reference to the items commented upon.

As regards Mr. Baynard's experiment upon unfermented manures, the experience of every one concurred in the fact, that during a wet or forcing season, that manure was decidedly injurious. Some of them however contended, that when the season was dry, *that* unfermented manures had been used with success.

As regards Mr. Becket's experiment of marsh-mud, as remedy for "blue," it was stated that unless the mud was very salt, it would not answer the desired purpose; and some planters gave it as their opinion, that the less vegetable matter the mud contained, and the more salt, the better.

In reference to Dr. Townsend's skimmer plough but one opinion was expressed, viz. that its general introduction would greatly facilitate our agricultural interest.

We have noticed this report, and the remarks which

its items elicited, in order that our planters might imitate the practice of the Edistonians in reporting on their crops. It will excite emulation in their own neighbourhoods, and will ultimately benefit the entire country.

Our Southern Planters' interests considered.

Pineland, September 20, 1836.

Mr. Editor,—Seeing you have honored me so much as to publish my notions of things we ought to raise for market or family use, I conclude you took in good part the trouble I gave you. The note you addressed me explaining your omission of so much as related to opium, proves that in so doing you exercised a sounder judgment than I did in writing it. It must be confessed the profit, and not the danger of the culture, was considered. Among other vegetable productions, of much usefulness and profit, I would have attention paid one which is indigenous to our soil and climate.

THE SUMACH *(Rhus.)*

Or as it is familiarly termed in the country, the *shoemake*, is known to all who have indulged themselves in rural excursions. Plantations of sumach can with much facility be established, and as it is an important dye-stuff, the proceeds will be greater than from short cotton. Every family can besides make their own vinegar, and of a very superior quality. Placing the shrubs or trees at invervals of twenty feet, an acre will set two hundred and forty-two. If but three pounds to every twenty feet square be produced, and I think this a very moderate estimate, the yield will be 726 lbs., which, at 30 cents, will amount to $217 80 cents per acre. When the fruit is sufficiently dried, it may be packed in either bales or casks, and shipped to any port, the resort of manufacturers. Premising that no particular rules for its cultivation, need be laid down for the government of people so familiar with it, I will conclude this notice with the following quotation:—

"It has got the name of *vinegar plant* from the double reason of the young germen of its fruit, when fermented, producing either new, or adding to the strength of old weak vinegar, whilst its ripe berries afford an agreeable acid, which might supply the place when necessary of the citric acid. The powerful astringency of this plant

in all its parts, recommends it as useful in several of the arts. As for example, the ripe berries boiled with alum make a good dye for hats. The plant in all its parts may be used as a substitute for oak-bark in tanning, especially the white glove leather. It will likewise answer to prepare a dye of black, green, and yellow colours; and with martial it makes a good ink. The milky juice which flows from incisions made in the trunk or branches, makes, when dried, the basis of a varnish little inferior to the Chinese."

FIGS *(Ficus.)*

Are grown in all our gardens, and daily observation teaches that little trouble is required to lay up a store, sufficient for a family or plantation. To me it has always been matter of surprise that this has been so long neglected. A more wholesome fruit does not grow, nor does one more generally grateful to the adult as well as the child. It possesses one advantage over almost every other, in the fact, that the fruit cannot be eaten in an unripe state, and the exemption of the tree from injury by cattle. The bark and foliage of the tree are as little palatable to the quadruped, as is the green fruit to the biped. This we all know, yet instead of groves of this invaluable tree on plantations well stocked with negroes, we find melons without end, a fruit universally admitted to be unwholesome, and absolutely dangerous, if not eaten in a proper state and at proper times. Melons, plums, and such trash, should be banished from every plantation, and figs extensively cultivated. To lay up a stock of figs for the use of his household and plantation, should be as much the care of the planter, as to provide provender for his cattle. The fruit is nutritious, and ought to be daily served out to the children in such quantities as will not cloy their stomachs, or too violently affect their bowels. Acting upon the system as a laxative only, it is not to be doubted the effect is beneficial to health. If a planter will adopt such a course of regimen for all his people, as will preserve in the stomach a healthy tone and action, many diseases will be prevented, and his saving in doctors' bills and lives of negroes, will be an amount of no inconsiderable magnitude. The free use of figs by all his negroes, will do much towards realizing so benevolent a design. This tree is not valuable to man only, but to the brute; a grove of them affording a cool and refreshing

shelter from the torrid rays of a pitiless sun. I would not have the planter to limit the cultivation to his own wants. He should produce the fruit as an article of trade. It is perfectly within the capacity of the Southern States, not only to expel from our markets all foreign fruit of this description, but to supply large quantities for export. Can any man give a sensible reason why we cannot do the one, or why we should not do the other? Why should the Southern States be dependent on western Asia, the east or the south of Europe, for an article which they can produce in the greatest abundance? I have no data upon which to base an opinion as to the probable profit, but every observant man must perceive the yield to the acre must be very great, and that at the very low price of four cents a pound, the product will be such as to remunerate the grower most liberally. The propagation of this tree is too well understood to need remark. The large blue or black fig is the best for table use, but those intended for market should be the largest of the pale varieties. On the mode of preserving them in the south of France, as an article of commerce, I find the following authority, and opinion of their use and value:—

"*Curing*—The fruit is first dipped in scalding hot lye, made of the ashes of the fig tree, and then dried in the sun." Simple enough. "*Uses*—They are a considerable article in the materia medica, chiefly employed in emollient cataplasms and pectoral decoctions. They stick to the hands and scour them like lixivial salts; and for the same reason they excite to stool without griping. They are nutrimental, grateful to the stomach, and easier to digest than *any other* of the sweet fruits."

It is not unlikely I shall trespass on your good nature again, as I desire most anxiously to stimulate agricultural enterprise into something like vigorous life.

Your obedient servant, CALEB.

On the Preservation of the Sweet Potato.

Mr. Editor—As this is the season when most planters are putting up their potatoes, the following essay on the subject may be useful. It was published some years ago in your journal, but as many of your present subscribers are new ones, and have not read the article, its re-publication will, I am convinced, be useful.

ONE INTERESTED.

To the Editor of the Southern Agriculturist:—

Dear Sir—There is nothing connected with our rural economy, so truly perplexing and vexatious, as the preservation of our crops of sweet potatoes. This most valuable root can be raised to almost any extent among us, but owing to this difficulty, is less attended to, and less valued than it should be. Could we overcome this, they would be almost invaluable to us; but at present, the loss sustained (seldom less than one-fourth, and often equal to one-half of what is put up for winter consumption) acts as a complete bar, and not more is grown than is calculated barely to support the slaves on the plantation during the winter months, and none for the feeding and fattening of hogs and cattle, than which, we have nothing better fitted, as is known to every planter in the Southern States.

The advantages enjoyed by England in consequence of the introduction of the turnip culture, is thought to be almost incalculable, rendering many districts which were poor and but thinly peopled, rich, and thickly settled with flourishing farms. The Irish potato has proven to Ireland a blessing, which can scarcely be justly appreciated. Yet each of these, much as they are deservedly thought of, are less valuable as food, both for man and beast, than the sweet potato. This has been abundantly tested in these States, and is a fact so well known, that I have never heard it doubted, and will not, therefore, take up your time in dwelling on it. The main point to be considered is, whether they cannot be preserved without incurring such heavy losses as we do now. I acknowledge this seems almost impossible, and yet we ought not to despair.

I have known almost every mode in common use tried, and with results so variant as to puzzle us, and convince us that we have not as yet discovered the true secret on which their preservation depends. Some place their potatoes in houses (built of puncheons) fill up as high as they can conveniently, fasten up the door, and never permit it to pe opened until wanted for use. In this way, they keep in some seasons remarkably well, and what is somewhat astonishing, generally best, when, by the other modes the loss is heaviest. Others again, place them in similar houses, but keep the doors constantly open, except in very cold weather. Others again, build small

fires daily in these houses (sufficient merely to dry up the moisture, and not to heat the house) until a certain time, and then discontinue it, and by this mode more generally preserve their potatoes than by any of the preceding. Others again place their potatoes in heaps of from ten to twenty bushels, and cover them over with straw, corn-stalks, and earth. Others make still larger heaps, having a pole inserted in the centre, around which they are piled, to a considerable height, when the hillock is enclosed with straw, corn-stalks, and earth, and the pole is removed, and the opening at top covered either with a piece of board, or pine bark to keep out the rain. The object of inserting the pole, and afterwards removing it, is to leave a vacancy in the middle of the heap, through which the heat and moisture can escape. I have never tried this mode, but it is highly spoken of.

From the above sketch you will perceive, that we are by no means agreed as to the best mode of preserving sweet potatoes; but we all agree in this, that the loss is considerable, and that it is highly desirous that some better mode should be discovered. The first point, however, which we must ascertain is the cause of this immense loss, occasioned by their rotting. Some attribute it to cut or bruised potatoes being mixed with the sound, but I have had heaps of cut potatoes keep just as well (sometimes better) than those which were not. Others, again, attribute it to their being dug after a frost, and are, therefore, anxious every year to get them housed before this event takes place; but I have never understood that these preserved their potatoes better than their neighbours, but on the contrary they often experience heavy losses, from the weather becoming warm after they were housed. Others, again, are on the other extreme, and will not permit a potato to be dug until a frost has checked the growth, and consequently long before they are all housed, they have had several severe frosts on them, and those whose ends are exposed become frost bitten. The advocates of late digging, give as reasons, first, that the increase of the crop is, beyond all comparison, greater in the last four weeks than during any other time, and moreover, that a frost is necessary for the better maturation of the root, on which its preservation, in a great measure, depends. The first, I believe, to rest merely on opinion, and although I do not think that the vines being killed,

the roots are injuriously affected, yet neither do I think it necessary; for if a certain degree of maturity was necessary for the preservation of these roots, how shall we account for the very smallest which are reserved for seed, keeping very often, (I might almost say always) far better than those which have been selected for eating, and why is it that those which we designate as "*root potatoes*," and which are more matured than any of the preceding, keep worse than any, in fact, are so difficult to be preserved, that few ever think of digging them in larger quantities than barely sufficient for present use.

Thus, it appears, that we all differ as the immediate cause. For my part, I cannot but think that the prime agents are heat and moisture: these, we know, are sufficient to destroy much less perishable materials than potatoes, and it is well known that both of these are produced, to a great extent, in every heap of potatoes when of any size, and when in such quantities as to fill a house, it becomes obvious to our senses. Of this, any sceptic may easily satisfy himself by merely going into one of these houses; when the moisture trickling down the poles, and the warm damp feeling, however cool the external air, will be evidence enough of the correctness of what I say. To obviate this, some have small fires (as we have before noticed) kindled in the front part of their cellars or houses. The principal object is, to fill the house with smoke with as little heat as possible, and consequently, those materials are mostly used which give out much smoke whilst consuming. In this way one of the agents is removed, and the other, perhaps modified. Be this as it may,—this, at present, has been the most successful plan that I am aware of.

If, then, heat and moisture be the principal causes of the decay and consequent loss of such large portions of our crop, (and really, I scarce think any will doubt this) our attention should be mainly directed to getting rid of them, and it becomes a query of some moment to us, how this can be best effected on a large scale. The use of small fires and smoke, although remedying the evil complained of, yet does not effectually remove it, for the moisture which rises to and above the surface of the heap, alone, can be dried or carried of, and, consequently, those in the centre, at least, if not those also, at the bottom, are liable to rot.

The plan, which occurs to me, as being most likely to obviate these difficulties, has at least simplicity to recommend it, and moreover, has been successful when tried on a small scale. It is nothing more than to have a quantity of sand intermingled with the potatoes, and this would, perhaps, be as well effected, by making alternate layers of sand and potatoes as any other. If dry sand could be procured, so much the better; but in all my experiments, I made use only of that which was at hand, without regard to its being moist. Of course I would not use it, if I could avoid it, immediately after a rain, or when wet. The way I would proceed, would be this: I would select an elevated spot for securing them where they would not be injured by moisture, should it prove a rainy season,—in addition to this I would raise a slight platform of earth, so that the first layer, at least, should be several inches above the surrounding surface. On this, I would place a layer of potatoes from six to twelve inches deep; (the first being, perhaps, preferable,) over this, I would spread a layer of sand, getting as much of it among the potatoes as possible. In fact, I believe, the preservation of the crop will be in some measure in proportion as this admixture is more or less complete, and if it were possible to surround each potato with sand, very few, indeed, would rot, which were not injured either by frost or some other cause before they were packed away. On this sand, another layer of potatoes should be placed, and then more sand, and this should be continued until the house is filled, or the hill made high enough. The whole should then be entirely covered with sand, to the depth of several inches in the house, and at least six inches if exposed in hills to the weather. In this you will observe, that I have omitted pine-straw and corn-stalks, so much used in putting up this crop. The reason for this is, that I believe them more injurious than useful; I would on the contrary carefully exclude every thing of a vegetable character, and have as near as possible only pure sand to cover the potatoes. I now proceed to give the rationale of this procceding.

It is well known that whenever any vegetable substance is collected together in considerable quantities, it is liable to become rapidly decomposed, if it be moist, but if perfectly dry, any quantity may be collected together,

without its undergoing any material change, and that it can be kept in that state for some length of time, provided moisture be carefully excluded. This is familiarly illustrated with grass and hay. If the grass whilst yet green, and consequently containing moisture, be placed in heaps, it soon heats, ferments, and rots; but after this moisture has been expelled, and it becomes converted into hay, it may be packed in any quantity in houses, and there kept for years with little, if any change. This is much the case with potatoes. When first dug, they are full of sap or moisture, even to the very epirdermis, and in this state they are taken and carried, (very often in carts or wagons) and thrown in large heaps either in a house, (where of course the confinement is greatest) or in the open air, where at least they have a better chance of parting with a portion of their heat and moisture, though as experience shows not with enough, unless the hills are small. Now any vegetable substance brought together in this state, would go through the regular processes of heating, fermenting, and finally rotting, and why should we expect an exemption in this case from the laws of nature. There will be none, and we must only endeavour to remedy what we cannot prevent; or rather neutralize one law by another. To effect this, we must either separate the particles so far from each other, that they cannot aid each other in producing this effect, or interpose some substance, which neither ferments or undergoes decomposition. Were we able to isolate every potato, and at the same time protect it from the action of the atmosphere, it is possible that they might be preserved for some length of time in a sound state, when originally put up so. But this is impossible, and our next inquiry should be, whether we can conveniently interpose some substance which will not ferment or decay. This can be done with sand, and if, instead of making alternate layers as deep as we have recommended, they should be made only so deep as to permit the sand to intermix and fill up the interstices, there is no doubt, in my mind, but that our loss would be trifling—that there would be a small loss is certain, for at harvesting, the ends of many are exposed and get frost bitten, and others are bruised in the carrying from the field and piling them up—but these as they rotted would not affect materially, (I scarcely think at all) the remainder, being surrounded by sand, which would

absorb and confine the moisture as it escaped. To sum up all in a few words, the sand being an imperishable substance, by being freely mixed among the potatoes, will prevent their heating, fermenting and rotting, in as much as in the first place, they will be separated from each other by it, even though they be piled in layers, though not so effectually as could be desired. In the second place the moisture given out in the form of hot vapour, which hangs around and injures each, will be condensed and absorbed, and the extraneous heat be permitted to escape through the numerous interstices of the sand.

But this is not, Mr. Editor, altogether theory, nor do I claim any merit for suggesting the use of sand, further than the mode and object of the application. Sand has long been used for preserving fruit, (especially apples) through the winter, and it is fair to infer that it will act with equal effect on potatoes. I do not, however, leave this altogether to inference but have acted on it, as I have repeatedly sent sweet potatoes packed with sand in barrels to my friends at the North, which have arrived in good condition, when I never could send them merely placed in barrels, even to New-York, without the greatest part rotting.

In conclusion, I will detail a small experiment, which although accidental, yet serves to confirm what I have advanced.

It became necessary for me to spend the whole winter together with my family in the city. Having made a fine crop of potatoes, I wished that we should enjoy at least a portion of them, and at the same time did not feel disposed to purchase what was in such abundance on the plantation. As opportunities would offer but seldom to bring them from thence, I determined to pack up some in barrels, and knowing from sad experience, how rapidly they decayed when thus packed alone, I had a parcel of sand got, and placing a small quantity at the bottom, proceeded to place the potatoes in, packing them as close as possible, and then filling the interstices with sand, as we advanced. The only care taken was that none should be bruised, and that all specked and rotton potatoes should be excluded. When the barrel was filled, we placed about an inch of sand at the top, having first shaken them so as to have every part completely filled with the sand. In this state they were headed up and sent to the city. I

do not believe that I had a potato less in the barrels, than if I had not used the sand, for they were placed in first and the sand afterwards thrown in and shaken down. I took no care to have dry sand, but used that which happened to be handy at the place where they were packed, and the most of it was moist. These potatoes lasted us until very late in the spring without sprouting or shrivelling, as is always the case when kept late, nor did I lose many by rotting, perhaps not more than half a dozen to the barrel, and this I had every reason to expect, for the potatoes had been harvested several weeks, and in selecting them, the heaps were overhauled. Those which rotted, in all probability, had received some injury, or had the seeds of decay, though not obvious at the time.

Thus, Mr. Editor, I have thrown together a few ideas, on what seems to me to be of more importance than most of our planters regard it. I hope, however, that some of them, at least, will bestow more attention on the subject. It is of great importance to us to preserve what we have laboured so hard to obtain, but under present management, a very large portion of every potato crop is lost. Let us then unite, and as a commencement, let us communicate such experiments and observations as each has made for publication in your journal. We will, no doubt, collect some most valuable information, and if we can hit upon the true mode of preserving the potato crop, we shall have done the State some service indeed.

I remain, yours,

RUSTICUS IN URBE.

Charleston, December 23, 1834.

Smut in Wheat—Potato Oats.

Cedar Shoal, October, 1836.

Mr. Editor—I saw some time ago in one of your numbers, a piece on the smut in wheat. If I can contribute any thing for the benefit of my fellow citizens or my country, I am always ready to do so. I have proven by actual experience, that one quarter of a pound of blue vitriol, pounded fine and dissolved in water, for each bushel of wheat, will destroy the smut in the worst smutted wheat. The wheat is to be put into a tub or cask, and covered with the water and well stirred, and all that floats on the top to be taken off and thrown away. After soak-

ing twelve or fourteen hours, the wheat is fit to sow. All the imperfect grains will be destroyed in the gum from which I believe the smut originates. My neighbours and myself have tried this for many years, and never knew it fail.

The last winter I bought one quart of the potato oats, and as I had to pay a high price for them, I was disposed to make the most I could. I prepared a piece of land, and put on it about at the rate of six wagon loads of stable and cow-pen manure mixed per acre, though it had been manured a little before (very old land.) It was ploughed two or three times, then laid off in drills about eighteen inches apart, and the seed dropt. Each grain was about six inches distance in the drill, and covered. One hand sowed and covered it in two days. It planted about three-eighths of an acre. It was hoed once, and the weeds picked out of it once. The product is seven bushels of clean oats.

A PRACTICAL PLANTER.

Eye Wash.

Charleston, September 24, 1836.

Mr. Editor—Permit me to record on one of your pages, a recipe for making a wash for the eye, invaluable in itself, and as necessary to the planter, as any other kind of information. I have tried it myself, and know it was extensively used by Dr. D******, now no more. It is perfectly innocent, and will cure any ordinary weakness, or inflammation of the eyes.

In half a pint of boiling rain or spring water, dissolve ten grains of white vitriol, and about the eighth of an ounce of clean gum-arabic. When the whole is perfectly dissolved by stirring or shaking, and cold, pour the water off very carefully and bottle it. Wash the eyes immediately after the morning ablutions, and again on going to bed. If they are *very much* inflamed or weakened, wash them again at mid-day. If the application is found very distressing, weaken a portion of the mixture, by the addition of boiled water.

C. W.

Petit Gulf Cotton and Corn.

Mr. Editor,—A week or two since, I paid a visit to the plantation of Edward Frost, Esq., in St. Andrew's Parish, about four miles from this city, and was both gratified and astonished at the yield of a crop of Petit Gulf cotton growing there. The result of my observation convinced me, that with a little attention and management, we may yet make our lands in South-Carolina, little less productive than those of the West.

Last season, Mr. Frost planted about twenty-seven acres of land in Petit Gulf cotton. The soil was worn out and exceedingly poor, and to my own knowledge, would scarce produce a crop of any thing. A portion of the fields was low, and all of them required draining.

Preparation of Land and application of Manure.

In the preparation of these lands, Mr. F. used the following method. He drained each field as well as his force and time would permit; and manured with the following manures:—

1. Marsh.
2. Marsh-mud.
3. Fresh-mud.
4. Compost, consisting of stable and cow-pen.

1. The marsh had been cut the summer previous to the spring when it was listed in the land. It had been collected during that period in heaps, and had been left to rot, which it partially did. In January and February this marsh was listed in, and bedded upon, just previous to planting in the spring. Mr. F. kept no account of the quantity of marsh applied to each acre, but regulated himself according to the quality of the land, applying the marsh in greater quantities to the poor land, *et vice versa*.

2. The salt-mud had been collected about the same period at which the marsh was, and was applied to the land, by pulverizing it well and listing it into the alleys of the former year, and then bedding upon it.

3. The fresh-mud was applied in the same manner as the salt-mud.

4. The compost manure consisted of cow-pen, collected on the plantation, and horse manure from the city. Both of these were placed under the list, in a state of only partial decomposition.

Results of the application of each Manure.

1. The field upon which the marsh had been applied, yielded the best cotton. It was forward in every respect, the fruit maturing easily, and during very severe rains not dropping the pods as other cotton around it. None of the cotton in this field rusted, except where the land had been badly drained, or I should say where it was not drained at all.

2. The field manured with salt-mud, was the next in productiveness. The only difference between it and the field that had been marshed, was that the latter had perhaps more *top fruit*.

3. The fresh-mud had been taken from a pond where much vegetable matter had accumulated. Its application to the same field where the salt-mud had been applied, produced a yield not much inferior to that manure. An obvious objection, however, was, that the cotton grew rather tall; retained vegetation too long, and lost some of its lower fruit by its too tardy progress to maturity. This cotton Mr. F. topped. He thinks he could see a decided advantage to the cotton after so doing; but in this opinion I am doubtful. An old and experienced planter has assured me, that in topping cotton, the plant always makes up in the growth of the new branches which it puts out, for the loss which it sustains in those of the top; and by throwing out a new growth at its roots, keeps the bottom pods from maturing as early as if the top were suffered to draw the vegetation upwards.

4. The fields manured with compost, produced the following results:

Wherever the compost had been applied in an unrotted state, the cotton took a second growth, and did not produce well; but wherever it had been applied in a decomposed state it did better; but not one half as well as the marsh or marsh-mud.

Amount of Cotton made.

The twenty-seven acres manured in the manner above stated, was not planted until between the last of May and first of June. Four acres were planted to each hand. About the middle of October, (the time I visited Mr. F.'s plantation) twenty-two bales (allowing ten cwt. to the bale) were housed; and allowing for every exigency,

there remained in the field five more bales of good cotton to be picked.

I must again repeat, that the land upon which this cotton grew, was originally worn down to the last degree of poverty. Its resustisitation to life and productiveness, was entirely owing to good draining and a judicious application of manures.

Nor was cotton the only plant on Mr. F.'s plantation which had turned out well. By the application of manure to his corn, a similar result to that of the cotton was produced. I myself saw the produce of one acre of corn measured, and the yield amounted to thirty-six bushels. Between five and six cart-loads of compost manure had been applied to each task, and the corn was planted one stalk to the hill, twenty inches apart, on beds five feet assunder.

After this evidence, is there any need for emigrating from our beloved State? Granting that our planters may make but one-third as much as in the instance of Mr. F., can they not make money, and withal live in a more desirable society and climate? Let our planters but try Mr. F.'s plans, and they will have no cause to regret the trial.

AN OBSERVER.

On the advantages of Potato Cellars.

Mr. Editor—Most planters during this month will be getting in their potatoes, and I shall contribute my mite, by giving my brother planters a few hints as to the *time of digging potatoes*, and the *best mode for putting them up.*

Long experience has taught me, that after a spell of dry weather is the best time for digging in sweet potatoes. When thus collected, they are less liable to rot, from their being more dry, and not so apt to sweat when put in the cellar. In digging in my potatoes, I always use the daggon plough. This I run down both sides of the bed, and throw off a deep furrow. After doing this, I use the hoe to remove the earth, which still remains about the roots. I consider the use of the plough very great in getting in my potatoes. Some persons have objected that it cuts the potatoes, but this is an objection not founded on fact. From actual trial with the plough, I find that not one half the number of potatoes are cut by using the plough as with the hoe.

In putting up my potatoes, I have, for the last fifteen years, given the decided preference to the *cellars*, over the common mode of *banking*. The advantages of the cellars over the banks, are,

1. They require less labour to make them.

2. Consume none of your corn-stalks or pine trash in putting up the potatoes, which could be otherwise used as manure.

3. By proper management keep the potatoes much better.

In a few days, with a few rails, a cellar might be made, capable of holding from six to seven hundred bushels of potatoes. My mode of making these cellars is this. I select the driest and most sandy spot I can find—I ditch off a square about twice the size of the space required for the cellar, and dig one main ditch to lead off all the water from the ditches composing the square. I now frame my cellar with rails in the shape of the roof of a hipped-roof house, and cover the same with dirt as free from all vegetable matter as possible. I should here observe that the rails should be well dried before putting them up, and the earth with which you cover must have as little fermenting material in it as possible. At the end where you intend to fix the door of the cellar, you must project the roof over from two to three feet. This will keep it from too much exposure to the air, &c. Running through the entire length of the cellar at the top, you should have a trough with the uncovered side turned downwards, so as to let out the heated atmosphere within the cellar. The cellar should be double partitioned within, so as to leave a passage way through it. The potatoes should be placed on either side of the passage, and should the potatoes be dug, some in dry weather, and others in damp, the potatoes so dug should be carefully divided and put by themselves. The reason of this is that the potatoes dug in dry weather will keep much longer than those dug in wet weather, and by mixing them the bad will injure the good.

Every day in dry weather the cellar should be opened from about eleven o'clock, A. M. until one P. M. This will have a tendency to convey away the dampness of the potatoes, occasioned by their sweating. During a continuance of damp weather, the cellar should be smoked

every one or two days. But care must be observed to make what is called a *dry smoke*. To do this, the fire used for creating the smoke should be made of the driest fuel. By pursuing the above mode, in putting up my potatoes, I have had them to keep throughout the entire year. ST. PETER'S PARISH.

Green Rye as a Manure for Cotton and Corn.

Mr. Editor—For some years back, I have been using green rye listed in as a manure for my cotton and corn. If the narration of my mode of doing it, will be of any benefit to your readers, I am willing that you should make it public.

Some time during the month of November, I run a trench upon the sides of the old cotton beds, with a small plough, which I have made for the express purpose. This plough is formed in the following manner:—A billet of wood about four feet long is selected, and at each end a small trenching iron is fixed. To this billet handles for the ploughman are attached; also a shaft to hitch the plough traces to. The trenching irons must be placed upon the billet about three feet and a half apart, so that when the plough is placed in the alley of the old cotton beds, they may be trenched on each side. With a plough of this kind, a light mule may trench many acres per day. In the trenches made as above, the rye must be sowed at the time already mentioned.

From being planted on the side of the bed, the rye will not be injured by the severe winter, because too much wet will not collect around the young plants.

Early in February I list in the rye, which has by this time pretty well grown up, and immediately after bed upon it. The rye will soon rot in this state, and will afford a fine manure for the cotton or corn plant, during the spring.

For several years back I have tried this experiment, and have found it a never failing resuscitator to worn out land. The first piece of land (six acres) I tried seven years ago. At that time it was miserably poor. By planting rye upon it, and ploughing it in green for two years running, I have been planting the field in cotton every year since with the greatest advantage.

I have applied green rye to my corn with the same effect.

At another time, I shall perhaps give your readers some hints upon the application of green oats as a manure for potatoes. For the present, I remain your well wisher,

An Inhabitant of St. Bartholomews.

Cure for the Dropsy, Rheumatism, &c.

Mr. Editor—I send you for insertion in your valuable journal, the following receipt for the cure of dropsy, rheumatism, scurvy, and cough in the lungs:—

Take English orris-roots, squills, and elecampane-roots, each one ounce, hyssop and horehound leaves, each one handful, the inner rind of green elder and dwarf elder, of each one handful, senna one ounce and a half, agarick two drams, ginger one dram; cut the roots thin, and bruise the leaves, and put them into two quarts of the best Lisbon wine; let these boil an hour and a half on a gentle fire in an earthen mug, very close stopt with a cork, and tied down with a bladder, that no air come to it, and so set it in a large pot of boiling water. Set it so that no water get into the mug, which must hold three quarts, that all the ingredients may have room to go in. When it is almost cold, strain it out very hard. You must scrape the elder downwards. Take this for a week together if you can, and then miss a day; and if that does not do, go on with your other bottle of the same. Take it in a morning fasting, ten spoonfuls at a time, without any posset drink; it will both vomit and purge you; it is an unpleasant taste, therefore take a lump of sugar after it. When it is quite cold, after it is strained off, let it stand in a flagon to settle a night and a day, then bottle it up clear and fine for use. It is an admirable medicine.

Castor Oil.

Pineland, Oct. 22, 1836.

Mr. Editor—I perceive "An Inquirer" is anxious to learn the value of the castor oil bean, and to what part of the world it could be exported to greatest advantage. No prices current that I have seen, notice the bean, but the value may be inferred from the price of the oil, which

must of course vary according to the quality, and the quantity in market. Economy in getting the article to market, would seem to indicate the beans should be cleaned, particularly if sent a considerable distance, as the bulk and expense of packing materials, would be greatly diminished thereby. But if the mill is within reasonable hauling distance, they might be safely carried in a wagon or boat, in bulk, as you would corn or peas. Casks would be preferable to bags for shipment, being cheaper, and not liable to spontaneous combustion, from absorbing the oil, which might happen to be mashed out of the beans. Such an accident might occur to bags, and do much mischief.

Every planter who has a cotton screw, can with great convenience express the oil for his own use, and that of his neighbours. Make a box of plank doubled, or strongly banded with iron. Let it have a firm bottom and sufficient diameter, to admit of the easy passage of the screw, while forcing down the follower, which may be a square block, or plank doubled and battened crosswise. The box must be perforated, and spiled at convenient distances from the top, to draw off the oil. Defective beans will furnish oil for gins, &c.

Your obedient servant, CALEB.

Notions on the Management of Negroes, &c.

Mr. Editor—I have thrown together, in the following lines, a few notions, which may be of some service to your readers. I have put them down just as they occurred to me. I wish that some of your correspondents, more accustomed to writing, would commence with the coming year, and give us the various duties of the planter, during each month. Books upon this principle, have been published for the English farmers with the greatest benefit to them; and why should not something similar be done for us? But to the *notions* I promised.

Negroes.

1. *Cleanliness* is a matter which cannot be too closely attended to. Every owner should make it a rule to appoint a certain day in the week, for reviewing his negroes and their habitations, to see that both are clean and in good order. For myself, I select Sunday, as the best day

for this purpose. My mode of making such reviews, is the following:—

I appoint a certain hour for attending to this matter on each Sabbath, say nine o'clock in the morning. Every negro distinctly understands, that at this hour he will be reviewed. An hour or so previous to the review, I make it the business of the driver to sound the horn, for the negroes to prepare themselves and houses for inspection. When the hour for review has arrived, it is also his business to attend upon me, and report the plantation ready for inspection. This being done, I repair to the negro houses. At the door of each house, the occupants thereof are seen standing with their children, if they have any. My business here is to call their respective names, and to see that every one has had his head well combed and cleaned, and their faces, hands and feet well washed. The men are required, in addition to this, to have themselves shaved. That they may have no excuse for neglecting this requirement, those that need them are provided with combs and razors. I now see that their blankets, and all other body and bed clothing, have been hung out to air, if the weather be fine. Their pots are also examined. I particularly see that they have been well cleaned, and that nothing like "caked hominy" or potatoes is suffered to remain about them. I next enter their houses, and there see that every thing has been cleansed—that their pails, dressers, tables, &c. have all been washed down—that their chimneys have been swept and the ashes therefrom removed to one general heap in the yard, which serves me as an excellent manure for my lands. Being situated where my negroes procure many oysters, I make them save the shells, which they place in one pile, of which I burn lime enough each year, to white-wash my negro houses, both outside and inside. This not only gives a neat appearance to the houses, but preserves the boards of the same, and destroys all vermin which might infest them. From the inspection of the negro houses, I proceed to their *well*, and there see, that the water is pure and healthy.

I should here state, that I repeat on Sunday what I do every time that I see any of my negroes, viz. to examine that their clothes are not ragged or broken. Recollecting that a "stitch in time saves nine," I suffer none of them

ever to appear with broken clothes. I give them the best clothes, and I see that they do not suffer them to be ruined from carelessness. In all of my inspections I have a little book, in which I note down every thing that I see amiss. The negro who has been the cause, is called up on the morrow, and receives such reprimand or punishment as his case may require.

Having mentioned their own duties; it will, perhaps, not be amiss to state what I owe them also. Exacting as I do, the utmost *cleanliness* of them, I particularly observe *cleanliness* in my own person. For instance, I never appear before my negroes unshaved, or negligently dressed, and every thing that I have to do, I do with as much punctuality and exactness as I am capable of. Ignorant minds are ever apt to imitate their superiors, and upon this principle it will be found, that if the master is negligent in the observance of his duties, the slaves will also become so.

II. DIET.—This is a matter of more importance than most planters are aware of. It is only necessary to inquire of the physician, or to consult any medical work, to be convinced that an improper attention to diet, is one of the most prolific causes of disease among our negroes, as well as whites. It is the almost universal custom in this State, to give out to each negro a weekly allowance of corn or potatoes, and to suffer them to cook it as they please. For many reasons, this plan is the most agreeable to the negroes. I shall show however, that it is far from being the most advantageous either to their health, or comfort. Every planter knows that there are many negroes, who rather than be at the trouble of cooking their own victuals, will trade away their allowance with their more industrious fellow workers, for one-half; and even where this is not the case, they are always found ready to barter away their whole weekly allowance to some neighbouring dram shop, for a gallon of whiskey, or a pound or two of tobacco, or bread. Where negroes are permitted to cook their own food, they neither have the time, nor capability to do it properly. It cannot be expected that the slave who is all day at hard work, can pay a proper attention to preparing his food after the day's labour. He generally comes home tired, and before he has half cooked his meal, hunger induces him to devour it. It is

true that some negroes cook their food in the field, while at work, but even this mode, must at once strike every one as very improper. In nine cases out of ten, they cook with bad water, in dirty pots, and without salt. But I shall not enlarge upon the many ill effects arising from permitting negroes to have their allowance, and to cook it themselves. One of your correspondents, in a former number, in an article on the subject, has pointed out many of the evils; I shall therefore, detail a remedy which I have been applying for many years; and let me assure you, Mr. Editor, each year has caused me to be better pleased with its observance. First then, when I give out corn as an allowance, I have it all ground into grist. And that this might be done with ease, I at first procured myself a corn-mill worked by horse power, which while it grinds and cracks all the corn on my plantation, only cost me a couple of hundred dollars. The corn being ground, I allow to each negro ten quarts of grist. Seven quarts of this I retain to be cooked for them, by a cook appointed for the purpose. The balance, three quarts, I give them to feed their poultry, or to do with, what they please. I have a person appointed to cook for all my negroes, who amount to about fifty in all. It is her business to prepare two meals per day; and for each meal she cooks a pint of grist to each grown hand, and in a smaller proportion for the younger negroes. That the food may be well done, she is required to cook in two or three distinct pots. Both for breakfast and dinner, I allow a small portion of meat of some kind, to boil with their food. And here let me observe that a bit of meat, which when divided among them all, would not afford a taste for any one, will, when cooked together, make soup enough to satisfy the whole plantation. In winter I require of the cook to have their breakfast ready at 8 o'clock, at which time the horn is sounded, and each negro comes with his piggin or bowl, and receives his portion, which is measured out to him by the driver. Dinner is required to be ready at 2 o'clock, and the same rules are observed as at breakfast. Since I have been cooking for the negroes of my plantation, I have never known one of them to complain of not having enough to eat. When I first adopted this rule, my negroes objected to it very much. But in a year or so they saw the utility of the practice, and

now I am convinced, that they would not abandon it for a great deal, so much does it contribute to their comfort and health.

Little Negroes.

I have a nurse appointed to superintend all my little negroes, and a nursery built for them. If they are left to be protected by their parents, they will most assuredly be neglected. I have known parents take out an allowance for their children, and actually steal it from them, to purchase articles at some shop. Besides, when they would be honest to their offspring, from their other occupations, they have not the time to attend to them properly. The children get their food irregularly, and when they do get it, it is only half done. They are suffered, by not having one to attend to them, to expose themselves; and hence many of the deaths which occur on our plantations.

I have just stated, that I have a nursery for my little negroes, with an old woman or nurse to superintend and cook for them, and to see that their clothes and bedding are well attended to. She makes the little ones, generally speaking, both girls and boys, mend and wash their own clothes, and do many other little matters, such as collecting litter for manure, &c. In this they take great pleasure, and it has the tendency to bring them up to industrious habits. The nurse also cooks for them three times a day; and she always has some little meat to dress for them, or the clabber or sour milk from the dairy to mix with their food. In *sickness* she sees that they are well attended to; and from having many of them together, one is taught to wait upon the other. My little negroes are consequently very healthy; and from pursuing the plan I have laid down, I am confident that I raise more of them, than where a different system is followed.

A PLANTER.

(To be continued in our next.)

PART II.

SELECTIONS.

Van Mon's method of raising Fruit Trees from the Seed.

[FROM THE HORTICULTURAL REGISTER.]

[General Dearborn has translated and published, in the above work, an account given by A. Poiteau, of the method used by Van Mons, to obtain excellent fruit from the seed. The prefatory remarks by Gen. D. we omit, and only insert the most interesting and useful facts, which were developed by Van Mons, during his experiments, as we find them in the Genesee Farmer of the 20th August last.—ED.]

Van Mons laid the ground-work of his experiments by collecting, during excursions through every part of the surrounding country, wild and natural stocks of fruit trees, which exhibit a favourable appearance, and which, from his familiarity with the characteristics, he was enabled at once to select. By means of these acquisitions, and repeated sowings from them, he had, in a few years, 80,000 fruit trees in his nursery, which enabled him to make his experiments on a large scale, and to obtain results more promptly and with greater certainty. "His repeated successive sowings," says Poiteau, "of annual flowers and perennial shrubs, which grew and fructified in a short time; his excursions to observe the wild types of our fruit trees, in places where they grow and reproduce in a state of nature; his new generations, which were obtained from wild and free or natural stocks, as well as from the first sowings in his nursery; his thousand upon thousand of observations collected from every quarter, have enabled Mr. Van Mons to establish a law which admits of no exceptions; this law is, that so long as plants remain in their natural situation, they do not sensibly vary, and their seeds always produce the same; but, on changing their climate and territory, several among them vary, some more and others less, and when they have once departed from their natural state, they never again return to it, but are removed more and more therefrom, by successive generations, and produce, sufficiently often, distinct races, more or less durable; and that finally, if these varieties are even carried back to the territory of their ancestors, they will neither represent the character of their parents, nor even return to the species [varieties] from whence they sprung."

Another very important conclusion at which Van Mons arrived from a long series of observations, was this:—While pear trees, in a state of nature, and in their native soil, always re-produce seeds, without any sensible variation; the seeds which a domesticated pear,—that is to say, one that has been for a long time in a state of variation in consequence of a change of climate or other cause, yields at its *hundredth* fructification, produce trees not only very different from itself, but still very different from the trees which have been produced from the seed

of its *first* fructification; and the older a domesticated pear becomes, the nearer do the trees produced from its latest seeds, approach to a state of nature, without, however, ever returning to it. Having arrived at this conviction, he concluded that "by sowing the first seeds of a new variety of fruit trees, there should be obtained trees always variable in their seeds, because they can no longer escape from this state of variation, and which are less disposed to return towards a wild state, than those produced from seeds of an ancient variety; and as those which tend toward a wild state have less chance of becoming perfect according to our tastes, than those which are in the open field of variation, it is in the seminary of the first seeds of the newest varieties of fruit trees, that we should expect to find more perfect fruits."

The above quotation comprises the whole theory of Van Mons. "It was to verify it, and put it in practice, that from that period he collected in his nursery young wild trees, young free stocks,* and sowed large quantities of the seeds and stones of various kinds of fruit trees, in order to have their *first* fruits, and sow their seeds in turn to obtain a generation, of whose novelty he was sure, and to take it as a point of departure for his experiments. Although Mr. Van Mons operated on thousands of various kinds and different varieties of trees, at the same time, I will assume, in order to render what I say more clear, in explaining his progress, that he made his experiments on a single variety of pear.

"As soon as the young pear tree with which he began his experiments, produced its first fruit, Mr. Van Mons sowed the seeds. There resulted a first generation, the individuals of which, although of very different kinds, did not resemble their parent. He cultivated them with care, and endeavoured to hasten their growth, as much as possible, by all the known means in his power. These young trees yielded fruit, which were generally small, and almost all of them bad. He sowed the seed of these, and obtained a second generation without interruption—which is very important—that were very different in kind, but did not resemble their parent, although they had a less wild appearance than their predecessors. These were cultivated with equal attention, and they fructified earlier than had their parent. The fruits of this second generation also varied as much as the trees which bore them, but part of them appeared less near the wild state than the preceding; yet only a few possessed the requisite qualities to entitle them to preservation. Constant in his plan, Mr. Van Mons sowed the seeds, and obtained a third continued generation, the greater part of the young trees of which had a *phasis* of good augury, that is, something of the physiognomy of our good domesticated pear trees, and they were consequently less various in appearance. Being carefully cultivated, as had been the preceding, these trees of the third generation fructified still earlier than had those of the second generation. Several of them produced edible fruit, although not yet decidedly good, but sufficiently ameliorated to convince Mr. Van Mons that he had discovered the true path to amelioration, and that he should continue to follow it. He also recognized, with the less satisfaction, that the oftener the generations succeeded each other, without interruption, the more promptly did they fructify. The seeds of the fruit of this third generation, which had a good appearance, were sowed, and the trees managed as carefully as the preceding, and produced a fourth generation.

* That is, natural stocks from *domesticated* varieties.

the trees of which were a little less varied, and nearly all of them had an appearance of favourable augury; they fructified in a shorter time than the third generation; many of the fruits were good, several excellent, but a small number still bad. He again took the seeds of the best kind of these pears, sowed them and obtained a fifth generation, the trees of which were less various than the preceding, fructified sooner, and produced more good and excellent fruits, than those of the fourth."

He continued his experiments till 1834, when he had reached the eighth generation, and at each he always obtained fruit more and more perfect.

Mr. Van Mons made the same experiment on almost all the other kinds of fruits. The apple yielded no other than good fruit in the fourth generation. The stone fruits, as the peach, apricot, plum, and cherry, became perfect in a still shorter time; all of them produced good and excellent fruits in the third generation; which should be the case, for our stone fruit always re-produce more or less good without any particular attention, and therefore they should with less difficulty, and in shorter time, arrive at a perfect state of amelioration."

The *time* required to arrive at a satisfactory result, that is, the number of years before each tree would produce its first fruit, and the number of generations necessary to advance the fruit to a state of sufficient excellence, was a subject of anxious importance. Van Mons found that three or four generations in uninterrupted succession, embracing from twelve to fifteen consecutive years, were sufficient to obtain no other than excellent fruit from the stones of peaches, apricots, plums, and cherries; and to obtain no other than excellent apples, four successive generations, and about twenty consecutive years were required. With the pear the difficulty was greater. "At first, Mr. Van Mons was unable to procure the seeds of varieties very recently procreated; the seeds he was obliged to commence his experiments with, were obtained from ancient varieties, whose age was much advanced, which from experience tended to retard the first fructification of his young trees. Nevertheless, Mr. Van Mons has been able to ascertain that twelve or fifteen years was the mean term of time from the moment of planting the first seed of an ancient variety of the domestic pear, to the first fructification of the trees which sprung from them. The trees from the second sowing of the seed of the first generation, have yielded their first fruit at an age of from ten to twelve years; as the mean term those of the third generation, at an age of from eight to ten years; those of the fourth generation, at an age of from six to eight years; and finally, those of the fifth generation, at the age of six years. Mr. Van Mons being actually at the eighth generation, has informed me that he has obtained several pear trees which fructified at the age of four years. From this decreasing progression, it may be seen that the fear of a lengthened experiment ought to decrease in proportion as it advances; and that adding the requisite years of the first five generations of the pear, a point is reached where none other than excellent pears are obtained, at the end of forty-two years. But if in each generation, as has been shown, there are always several trees which do not await the mean term named for their fructification, the time may be estimated at thirty-six years, for obtaining from the pear, in five uninterrupted generations, new trees and fruits, all of which are of excellent quality. The time can still be more abridged; for in one of his last letters Mr. Van Mons informed me that from two of his first sowings of pears, there were trees produced which fructified at the age of six years."

His method of treating his seedlings was as follows:—He left them in the seed bed two years; he then took them up, threw away a part as worthless, and transplanted the most vigorous at a proper distance to allow them to develope themselves. He planted them sufficiently near to force them to run up tall, and to form pyramidal tops, without pruning; this hastens, he states, their fructification. This distance was about ten feet. While wating for them to fructify, opportunity was afforded to examine the characteristics of their future excellence. It was generally not until they were four years of age, that they began to develope distinctly these characteristics. From long continued observations, he was enabled to establish the following prognostics:

"1. *Prognostics of favourable augury.* A good form, a smooth and slightly shining bark, a regular distribution of the branches, in proportion to the height of the tree; annual shoots bent, striated, a little twisted, and *breaking clean without splinters*, thorns long garnished with eyes or buds, their whole, or nearly whole length; eyes or buds plump, not divergent, red or grizzled; leaves smooth, of a mean size, crimped on the side of the middle nerve, borne on petioles rather long than short, the youngest, in spring, remaining a long time directly against the bud, the others, or the inferior, expanded, hollowed into a gutter from the bottom towards the top, but not their whole length.

"2. *Prognostics of bad augury.* Branches and twigs confused, protruding like those of the hornbean, or broom, thorns short, without eyes; leaves averted from the bud, from their first appearing, small, round, terminating in a short point, guttered their whole length. These characteristics indicate small fruit, flesh sweet and dry, or baking fruit and late.

"3. *Prognostics of early fruit.* Wood large, short; buds large and near.

"4. *Prognostics of late fruit.* Wood slim, branches well distributed, pendent, the shoots a little knotted, generally denote late delicious fruit; with leaves round, point short, stiff, of a deep green, borne on petioles of mean length, are analogous signs, but less sure."

We close this article with an account of the severe disappointments which this distinguished man has been doomed to experience of late years. While pursuing his experiment on a very extensive scale in his nursery at Brussels, in 1819, the ground which was occupied by his vast collection of new fruits, was declared to be indispensible for streets and building lots, and he was summoned to vacate it in the short space of two months, under the penalty of seeing all his trees cut down and thrown into the fire. As professor of the University of Louvain, he resolved to remove his nursery to that city, that it might be more completely under his control; but the period assigned for evacuating his nursery, was unfortunately in the winter. His loss was consequently great and irreparable; and being obliged to confide nearly the whole care and labour of removal to others, it was with great difficulty he saved a twentieth part of his nursery. After his removal to Louvain, with the exception of having a great number of young plants broken down and drawn out of the ground, by the masses of ice which were left upon it, after a great freshet in the river which passes through the city, and which overflowed his nursery to the depth of seven or eight feet, he enjoyed more or less quietly his new location during the following thirteen years. His correspondence was renewed and extended, his losses were replaced by new acquisitions, and the mass of his observations was augmented, and his new varieties were liberally disseminated. "But," observes Porteau, "*public utility* had sworn that she would finally embitter his old age. In 1831, we besieged the citadel D'Anvers, and although Mr. Von Mons' nursery

was fourteen leagues distant from the army, the engineers could not find a more commodious place than that nursery, to bake the bread of the soldiers in: consequently a great part of his trees were destroyed, having constructed their ovens on the ground where they grew, and the fruit of the others was exposed to pillage. Still the philosophy of Mr. Van Mons sustained him in this unexpected devastation; he hired two other tracts of land into which he removed his young plants; he was consoled because he had time to collect, although it was summer, scions of the trees which were sacrificed to afford a place for the erection of ovens: but *public utility* had not yet exhausted all her severities against him. Unfortunately, there was not a Chaptal in the council of the prince, and the engineer, seeing nothing, decided again, in 1835, in the name of *public utility*, that Mr. Van Mon's nursery was the sole and only point on the globe, proper for establishing a gass house for lighting the city. Heaven grant that these gentlemen may be enabled to see better for the future; but it is not in their power to prevent the true friends of intellectual light, and of public prosperity, from regarding their decision as an act of ignorance and the grossest vandalism.

"Mr. Van Mons is actually seventy years of age; he has consecrated his whole, all his life, a large part of his fortune, to public utility, and yet it is in the name of *public utility* that they have slain him, assassinated him! O age of light, how dark thou art!

"In the commencement of September, 1834, Mr. Van Mons, on sending me a box of pears, which were the first of a seventh generation, observed in his letter, 'when you taste these pears, the trees which bore them will no longer exist.' In fact, I learned a few days after, that the destructive axe had prostrated these trees and many others, that the nursery was dishonoured, lost, and Mr. Van Mons frustrated in his dearest hopes, which were to send us the products of his labour.

"It is impossible to foresee, or rather I dare not express my fears, as to what will become of the ruins of an establishment, which wanted encouragement, which was of a nature to elevate the glory of an empire."

A note is added, stating that he had been ordered to evacuate the whole of the land before the end of February.

The Method of raising Thorn Plants.

[FROM THE INDIANA AURORA.]

To the Agricultural Society of Indiana.

Gentlemen,—As your society was formed for the purpose of promoting the interests of Agriculture generally, in the state, I submit to your consideration a sketch of the English method of hedge and ditch fencing, and a few observations on the benefits likely to accrue from the introduction of that method of fencing in this state:

The seed is sown in rows about a hoe's breadth apart, so that the plants can be hoed and kept clean. When the plants have had a summer's growth, they are fit for planting out in fences. Fences are made in various ways, but the way that they are commonly made, is, to make a ditch, say three feet wide at the top, two feet deep, and sloping on both sides to about sixteen inches wide at the bottom. All the earth that is thrown out of the ditch is thrown on that side that is intended to be enclosed. It will now be a tolerable fence, being some-

thing more than four and a half feet from the bottom or opposite side of the thrown up earth. The thorn planted when, and as the ditch is made. Lay the plants on the solid ground horizontally, about four inches apart, with their tops towards the end of the ditch. Then the first layer of earth is laid on them, it is trampled down firmly, that the plants may the more readily take root. The fence will still be incomplete until the thorns grow sufficiently to make it so: in the mean time, a hedge of brushwood is made along the top of the thrown up earth, which will last six or seven years. By that time the thorn if it has been properly tended, will have grown sufficiently strong to be a complete fence of itself; or a temporary fence might be made by driving a row of stakes down along the top of the thrown up earth, about two feet apart, and winding brushwood in them. This is called *stake and rider:* or stakes might be placed on the ditch; and short stakes on the other side of the fence, and staked and ridered. Either of these temporary fences to be seven feet high from the bottom of the ditch. Forest trees are planted along the fence about a rod apart; and there are also ten or twelve trees planted in the corner of each field; these will, in the course of a few years, be sufficient for all the purposes required on a farm.

To give a view of this improvement, take for example a quarter section of land, divide it into sixteen ten acre fields; suppose the cost of making the fence to be twenty-five cents a rod; and I think it might be made for that sum, it would amount to four hundred dollars. And if trees were planted a rod apart along these fences, there would be sixteen hundred trees; and ten in each corner of the fields, would be six hundred and forty more, or two thousand two hundred and forty in all. But double that quantity might be planted at first, and thinned out as they were needed. A farm so improved, would be like an elegantly laid out garden; but the most important advantage would be, the land being made dryer by the ditching, would become more healthy. And how many thousands of acres of valuable land would be brought into a state of successful cultivation. It would also increase the value of that which is now in cultivation. I do not know of any other improvement that would have so great a tendency to develope the riches of the soil, and thereby add to the resources of the state. I think I might hazard the assertion, that by the improvement of hedge and ditch fencing, one fourth more land would be brought into cultivation. And this mode of fencing must ultimately be adopted, in consequence of the scarcity of timber to construct fences in the usual way. It will not be then a matter of choice but of necessity. It may be asked, why do not farmers adopt the improvement of their own account? The answer is obvious: they do not know how these fences are made or managed. The introduction of improvements by those who do not fully understand them, is necessarily attended with expenses and difficulties, and it would hardly justify an individual to make an experiment on such a scale as would be a fair test for the introduction. But admitting it to succeed to his expectation, all that could be reasonably expected from it, would be, to set an example to his neighbours; and it would not be likely to contribute much to bring it into general use; whereas, by the influence of an enlightened society, the improvement might become general in a few years; therefore I believe it to be the duty, as well as the interest of the agricultural society of Indiana, to exert its influence to introduce this important improvement into this state. I would go farther.—I think the society ought either to offer premiums for the introduction of thorn nurseries into the state, or to establish a thorn

nursery itself, and employ an intelligent nurseryman to raise the thorn; show purchasers specimens of fences, with an account of the cost of constructing, and method of managing them. County Agricultural Societies might also co-operate with the State Society, by offering premiums for the best thorn fence in their respective counties.

Should the Society see proper to adopt measures to introduce this improvement into the State, and I cannot conceive any reason why it should not, it would be necessary for it to obtain as much information on the subject as possible. For this purpose, I would suggest that the Society correspond with Sir John Sinclair, the able editor of the Farmers' Magazine, published in Edinburg, in Scotland, (if he is still alive,) from whom ample information would be obtained.

When we consider the great quantity of timber that would be saved and produced, the advantage would be great; but it would be of more advantage to the praries, a considerable part of which cannot be settled for want of timber, and to the wet land, that would be laid dry and rendered fit for agricultural purposes, or valuable for meadows. For the attainment of these objects, to say nothing of the beneficial effect it would have on the health of the citizens, certainly merits your attention, besides, the citizens look to you to take the lead in these improvements. Trusting these suggestions may meet your approbation, I remain, your's respectfully, ROBERT WATTS,

Jefferson, Clinton Co. Jan. 6, 1836.

Lime as a Manure.

[FROM THE GENESEE FARMER.]

To distinguish soils on which lime would be more useful than on all others, M. Puvis says that "chemical analysis is the *surest* means." This would doubtless be a *good* method, if the analysis of soils, as recommended by chemists, was perfect: that is, if it could detect lime when it exists in the soil under *every* form; but the chemistry of nature is somewhat in advance of his, who goes to work with tests and retorts. From soils which have been pronounced destitute of lime, living animals can procure a sufficient supply for their bones and shells; and trees can obtain tons of potash where our best operators would despair of success.

M. Puvis proposes, however, another method of determining whether soils require liming; and this is to judge from the vegetables which grow on them spontaneously. Some vegetables, undoubtedly, may be taken as an infallible index. Of this class, is the Red Sorrel *(Rumex acetosella);* but several other plants of this list, are at best, equivocal; and though we have no doubt that in his own particular neighbourhood he may have found them useful, yet in other countries they are quite as likely to mislead as to guide. We will give some examples:—The "Cow Wheat," *(Melampyrum,)* which he considers as indicating a calcareous soil, includes no less than seven or eight species, and some of these decidedly prefer soils in which lime can only occur in very small quantities. Such is the case with our own American species, *(M. Americanum,)* and such is the case with another in England, *(M. arvense,)* which grows in *sandy* fields. Again, some species of the "Rest Harrow," *(Ononis,)* also grow indigenously in *sandy* soils, the very kind of land which M. Puvis very properly directs us to lime. In England, one sort grows in "barren fields," but no field is barren which contains lime in a just proportion. We could

object to several other plants which he has named, but we prefer adopting his advice in another part of the "Essay":—first to try experiments with lime on a small scale. This plan we consider more judicious than any other.

We have not been able to resist the impression that several of the opinions of M. Puvis, have been too hastily formed. In referring to certain soils, he says, "All these are almost certainly calcareous, *have no need of lime, nor its compounds*, and *would feel from their use rather* ILL *than* GOOD *effects*." This exclusion of *gypsum* as a manure, from calcareous soils, has been justly objected to by the translator; but we have seen no limestone land which would be injured by the addition of very liberal quantities of *lime*, provided it could speedily become carbonated. We cultivate fields so highly charged with it, that throughout a large portion of them, the *sub-soil* will effervesce with acids; and which have yielded forty bushels of wheat to the acre; yet last spring, we limed a part of our kitchen garden which is surrounded by those fields, at the rate of nearly three hundred bushels to the acre. Are we asked if the land has become sterile or impoverished? Do vegetables dwindle and appear as if their due nourishment was withheld?—No, just the reverse. We never had any that grew more luxuriantly; and we are so well satisfied with the result, that we intend to subject the remainder to the same treatment.

It may be proper, however, to make some explanation. The lime probable contained no magnesia, and had been slacked almost two years. Of course it was not *caustic* when applied. Yet the facility with which *pure* lime becomes saturated with carbonic acid, is so great when the ground receives as ours did, a heavy dressing of stable manure, that we shall not hesitate to apply lime newly slacked.

Another opinion of Mr. Puvis, has shaken our confidence in his correctness: He says, "In limed earth, weeds and insects disappear." We have not found it so with weeds generally; neither have we perceived any diminution of insects. The common weeds which infest gardens, have grown finely wherever they have had an opportunity, and with the exception of Red Sorrel, or such as have juices decidedly acid, we know of no right that we have to expect them to disappear. Neither the common earth-worm, nor the grub-worm, have been restrained in the least by the lime, as far as we could observe: and the turnip-fly and the striped bug, entirely disregard it, except when it is thrown on them in a half caustic state.

He also says, that "The grain from *limed* land is rounder, firmer, gives less bran and more flour than that from *marled* land." We suppose that this remark was founded on observation; but we suspect that some other agent, independent of the lime and marl, produced that result. Marl, correctly defined, is carbonate of lime *mixed* with a variable proportion of clay; and what does burnt lime become when spread and exposed on the soil to the season, but carbonate of lime? If 100 bushels of marl, containing 50 per cent. of carbonate of lime, be applied to one parcel of ground; and 50 bushels of lime fully carbonated be applied to another equal parcel in the same field, have we any reason to expect a difference in the crops?

Our author recommends the application of lime in small quantities; and rather condemns the prodigality of the English liming. It may be well to consider this subject. If the soil to which putrescent manures are applied, has no chemical affinity for the fertilizing gases which rise during the fermentation, such manures must cease to operate in a very brief period; and all must be wasted except such part as the grow-

ing crops can seize on, at the time. It is far otherwise, however, where the soil contains lime in proper quantity. The part which is not *immediately* wanted to supply the demands of vegetation, is safely stored up, by combining with the lime for future use; and an exemplification of one case may be observed on poor sands, and of the other case on our rich loams. It must therefore be important to use lime enough to prevent the volatile parts of the manure from being wasted. It is true that ten bushels to the acre may be a profitable application; but if forty more be necessary to save the whole of the fertilizing gases, the farmer would sustain a serious loss without such addition of lime.

M. Puvis speaks of the exhausting nature of lime on poor soils; and an explanation in this place may be proper. Fresh lime when applied to a soil destitute of vegetable matter, and more especially if it contains much magnesia, would operate unfavorable for a time on account of its causticity; but the true state of the case is, the soil was exhausted before; and such lime, like an empty purse, can add little to the wealth of the owner, though it lies ready to receive and retain the treasure he may provide. We should therefore advise in regard to soils of this description, that the lime be either made into compost, or else applied to the *surface* of the field, after a good dressing of stable manure has been evenly and thoroughly ploughed in. In the latter case, the lime would not fail to detain the fertilizing gases that would rise through the soil.

To conclude:—Experiments to test the value of ten or twelve bushels of lime to the acre, can best be made on soils already fertile with its compounds, so that putrescent manures may not be wasted on them; and for the same reason, we would recommend liberal dressings of lime on all soils which contain it in very small proportions.

Liming Destroys Malaria.

[FROM THE GENESEE FARMER.]

It has been already shown in this journal, that one of the most important uses of lime is to absorb the gases which arise from fermentation, and which constitute the food of plants. Some of these vapours are mephitic; and it follows as a necessary consequence that their absorption by the lime must render the locality more salubrious,—converting the poison into aliment, the nuisance into a blessing. We are not positive, though we are inclined to believe, that E. Ruffin was the first writer who brought the subject fairly before the public. It has also been mentioned, however, in an English work, the "Journal of a Naturalist;" and M. Puvis speaks of it in decided terms.

The author of the excellent "Essay on Calcareous Manures," has proposed the introduction of *Marl* into towns and cities, to purify the streets, cellars, and back-yards; and in our opinion no proposition of more importance, has been made in modern times. There is reason to believe that had this measure been employed in 1832, thousands of our citizens might have been saved from the Asiatic Cholera. It is well known that a great disparity in cleanliness, has existed between the different cities; and a corresponding disparity in the number of deaths at the time of that awful epidemic; yet in no case that we are aware of, have the streets been cleansed except by water or by scraping. These methods, however, are not entirely efficient. Filth will settle in between the paving stones, which neither method, under ordi-

nary circumstances, can remove; but which *marl*, as if by magic, would render perfectly harmless. "The Conservators of the Public Health" possess great power, and ought to use it.

"The streets ought to be sprinkled with marl," says the last mentioned writer, "and as often as circumstances may require. The various putrescent matters usually left in the streets of a town alone, serve to make the mud scraped from them a valuable manure; yet the principal part of the bulk of street-mud is composed merely of barren clay, brought in upon the wheels of wagons from the country. Such a cover of calcareous earth would be the most effectual absorbent and preserver of putrescent matter, as well as the cheapest mode of keeping a town always clean. There would be less noxious or offensive effluvia, than is generated in spite of all the ordinary means of prevention; and by scraping up and removing the marl after it had combined with and secured enough of putrescent matter, a compost would be obtained for the use of the surrounding country, so rich and so abundant that its use would repay a large part, if not the whole of the expense incurred in its production. After twenty years of such a course, the surrounding farms might be capable of returning to the town a ten fold increased surplus product.

Those who are habituated to breathe the pure air of the country, become very sensible of the noxious exhalations of the streets when they visit our cities, especially in the morning in hot clear weather before the wind rises, as it generally does, in the forenoon. But some localities are offensive at all seasons of the year. This is the case with slaughter houses, and it would be no unreasonable stretch of prerogative for our city and village authorities to insist on the abatement of such nuisances by a liberal application of *marl* or quick lime. The *former* is the best for the following reasons: "Quick lime forms new combinations with putrescent substances; and in thus combining throws off effluvia, which though different from the products of putrescent matter alone, are still disagreeable and offensive. Mild lime on the contrary, absorbs and preserves every thing."*

It may now be proper to furnish some evidence of the salubrious influences of lime in the soil.

"My principal farm," says E. Ruffin, "until within some four or five years, was subject in *a remarkable degree* to the common mild autumnal diseases of our low country. Whether it is owing to marling, or other unknown causes, these *bilious diseases have since become comparatively rare*. Neither does my opinion in this respect, nor the facts that have occurred on my farm, stand alone. Some other persons are equally convinced of this change on other land as well as on mine."

He afterwards says in 1835, "The foregoing was first published in the Farmer's Register for July, 1833. It is proper to add, that the two autumns that have since passed, have brought no circumstance to weaken the opinions advanced, and many that have served on the contrary to strengthen them."

A correspondent of the Farmer's Register says, "The streets of Mobile are generally unpaved; and as a substitute for stone or gravel, which is not to be obtained, *shells* which have long been untenanted, are strewn over the carriage ways and side walks to the depth of several inches. These soon become a firm mass, and form a smooth surface, so as to resemble a M'Adamized road. The shells, which are of

* Essay on Calcareous Manures.

various kinds and generally small, are raked up in great quantities in the shallow lakes, and brought to the city in large lighters. *Mobile is much more healthy now than it was before this plan of improving the streets was adopted.*"

Another correspondent of the same paper, subsequently says, "A few days ago I saw a near connexion who has just returned from a settlement which he has made on the Black Warrior, about 50 miles below Tuscaloosa. He spoke of the fact that *Mobile had become more healthy within a few years*, without, however, assigning any cause. He also represented a very large portion of that country between Tuscaloosa and Mobile, as *calcareous* and abounding in *shell marl* or soft limestone. He says the country, if not more healthy, is certainly not more sickley than [the middle and hilly region of Virginia,] and that it appears to be *generally understood there that the marl preserves it from disease.*"

It appears from a letter dated at Mobile and published in the Farmer's Register, that until the year 1827, it was "counted unhealthy," not only because yellow fever had "raged like a pestilence" at different times, but also on account of bilious fevers. Various improvements, however, were in progress, such as raising the streets above high tides, erecting brick buildings, &c. The writer says, in reference to these improvements, "Since 1827 the effect on the comfort and *health* of the place is abundantly obvious. Every street is *shelled* —all the alleys—many of the yards—all the public ware-house yards, and tavern yards, are *shelled*—several of the streets are shelled for half a mile back, and one that meets a leading road is shelled over a mile —many of the cross streets are shelled, and ere long every street in the city will be shelled—it is indeed the settled policy. *Mobile has been uniformly healthy since* 1827. Last fall and this summer, while the Cholera raged so fatally in New Orleans, Mobile was visited with very few cases, and they excited little or no alarm. The deaths were four or five."

In another communication to the Editor of the Farmer's Register, it is said, "There is another fact connected with this part of the subject that strongly corroborates your views regarding the healthy action of calcareous earths on putrescent matter. The fact is that *the prairies have proved to be the healthiest part of the State*, notwithstanding the water is to all appearance bad, and is very unpleasant to the taste."

A correspondent of the Southern Agriculturalist, in referring to the prairies of Alabama, writes as follows: "I think the country more healthy than [South Carolina,] owing in part to its being more high, dry, and broken, and more under the influence of the strong trade winds; but *there must be a further reason*, because I have seen local causes enough to produce sickness here, in spite of the general causes of salubrity. Families reside with security on their prairie plantations all summer, in the midst of extensive clearings of rich land. *I think it must come from some purification of atmosphere arising from the immense quantity of lime on and near the surface of the soil.* The other lands in that country under similar circumstances, are not more healthy than in [South Carolina.]"

We shall now present extracts from the "Essay on the use of Lime as a Manure." After referring to "emanations which attack the health of the inhabitants." M. Puvis says, "This unhappy effect appears almost no where in calcareous regions: the margins of lakes and ponds there situated, do not produce the same unhealthiness, and even the marshy grounds there are less unhealthy.

"Linnæus thought that the unhealthiness of most countries depended on the nature of the water, and was owing to the argillaceous particles which they contain. Now these *argillaceous particles are always precipitated by the calcareous compounds.* For this reason, the waters which stand upon, or run over marl or calcareous rock, are almost always *limpid and clear.*

"We are not far from believing then, that throwing *rich* marl or lime, into a well of muddy and brackish water, might have the effect, in part at least, of *clearing* it, and making it healthy to drink.

"Lime in all its combinations, destroys the miasmata dangerous to life. Its chloride annihilates all bad odours, arrests putrefaction, and in short, has subjected the plague of Egypt to the skill and courage of Parisot. The white-wash of lime upon infected buildings, upon the walls and mangers of stables, is regarded as serving to destroy the contagious miasmata of epidemic and epizootic diseases.

"The limed soil then, to the depth it is ploughed, ought to change its emanation as well as its products; and if the lower strata or subsoil send up emanations, these effluvia in passing through the improved layers of the soil, where the calcareous agent is always at work and developing all its affinities, ought also to be modified, and take the character of those of the upper bed. The limed soil then, it would seem, ought to be made healthy.

"But what we maintain here by induction, is fortunately a fact of extensive experience. *Among all the countries in which lime has carried and established fertility*, there is not cited that I know of, *a single one where intermittent fevers prevail*—while they have *never disappeared* in a country, even where an active culture draws good products from the impermeable argillo-silicious soil.

"To extend the great benefit of healthiness to the whole of a country, it is no doubt necessary that the whole country should receive this *health-giving agent.* On every farm, in proportion as liming is extended over its surface, the chances of disease will be seen to diminish: and *the healthiness of the country will keep pace with the progress of its fertility.*"

Green Crops as Manure.

[FROM THE GENESEE FARMER.]

An illiterate farmer asked, "Why does not my ten acre field sink down, as I and my ancestors have taken more than a hundred crops from it, without ever adding a particle of manure?"

He was not aware that the substance of his crops, instead of being derived from the earth, was principally obtained from the *air*, and from the moisture in the soil, so that the quantity of soil itself was little affected.

To prove that plants may be produced from no other substances than air and water, let the following experiment be performed. Procure a quantity of pounded glass, wash it clean, put it in a clean glass vessel, and plant in it grass seed or grain; let it be elevated from the ground and kept remote from any thing that can drop into it or come in contact with it. Moisten it frequently with perfectly pure water, so that not a particle of any thing else can come near it. The seeds will vegetate and grow to a height of several inches; and the glass will not be diminished in the least. If the experiment, instead of being made with pounded glass, were made with silex, alumine, and carbonate of

lime, in those proportions in which they exist when they form the most fertile soils, the result would be the same. It is true, that in all good soils there exists vegetable and animal matter, the quantity of which is affected by the growth of plants: but these substances form but a small proportion of the whole, and vegetable matter in soils is as likely to be increased as diminished by the growth of plants.

It will thus be perceived, that the practice of enriching land by green crops, is in fact nothing else than obtaining manure from the *air and rain*;—that plants form a channel through which fertilizing substances are conveyed to the soil, which are taken in by the leaves and pass through the stems to the roots.

The roots of grass in good sward ground make a formidable subterranean forest in minature, and it is asserted on respectable authority, that more than twelve tons are thus added to the fertilizing properties of every acre of soil. When, therefore, the leaves and stems, as well as the roots, are also thus applied, the whole quantity becomes very large.

Crops turned under for manure, should always be in a green state, and never ripe and dry. In the former case they ferment and become fit for supporting vegetation; in the latter, they continue unrotted often for years.

Loudon, speaking on this subject, makes the following interesting statement: "Among the most active parts employed as manure, I have found the wild species of the genus Sinapis, (mustard,) ploughed in fresh in the bottom of turnip drills, at the rate of twenty tons per acre. The produce brought at auction £12, while the rest of the field, manured with twenty tons of farm-yard dung, brought only from £9 to £10 per acre. Other weeds, such as nettles, thistles, &c. produce crops superior to farm-yard dung.* Potato stems, fresh ploughed in on clover lay for wheat, I have found to produce crops exceeding by two bolls per acre in quantity, with more proportionate weight of straw, than other parts of the same field manured with farm-yard dung, but otherwise under the same circumstances. The stems from three acres of good potatoes, will manure an acre of wheat, to much better purpose than fifteen tons of farm-yard dung, the usual quantity allowed in that part of the rotation, clover and wheat being the crop which generally precedes fallow."

We think that in no case farm-yard manure should be rejected or wasted, because all the manure which can possibly be had is always needed in good farming; but fields remote from manure yards, may frequently be enriched at less expense by green manure, than by carting farm-yard-dung upon them. This will be evident when we take into account the expense of drawing and spreading on the one hand, and the fact that a crop of vegetable growth is already upon the ground, spread as evenly as is desired, on the other.

* We have observed in all parts of the country, in the latter part of summer, pastures literally covered with an enormous growth of the common field thistle, *(Cnicus lanceolatus,)* so that little else could grow upon the land. If these, about the time of blossoming, were cut, raked in heaps with a horse rake, and allowed to ferment, they would furnish a vast amount of manure, and prevent the seeds spreading.

Profit of the Chinese Mulberry.

[FROM THE SILK CULTURIST.]

A writer in the Northampton Courier of the 3d ult. over the signature of "Silk Cabinet," shows by arithmetical calculation that 100 Chinese mulberry cuttings, worth $6,00, may be made to yield their cultivator in trees and silk a nett profit of $14,50 the first year, $476,00 the second, and $6000,00 the third, after deducting 25 per cent for over calculation, &c. Though our confidence in the success and profit of this species of mulberry is unwavering, yet, we must confess, we had some misgivings respecting the possibility of realizing such enormous sums from so small an investment. It is true we could not demonstrate the fallacy of the statement, or discover an error in the calculation, but after all we could not disposses ourselves of the suspicion that there was some latent mystery about it, which, even a Maine arithmetician would find difficulty in detecting. With these views we should have omitted noticing the statement in detail or their results; but when we find them corroborated by the experiments of the Mess. Cheney, which we gave in our last number, we are compelled to yield to the force of evidence, and admit, not only the possibility, but the certainty of such astonishing profits.

The Courier of the 10th ult. contains the following communication from one of the Mess. Cheney, detailing more fully their experiment, and showing that "Silk Cabinet" instead of overrating, has actually underrated the profit of the Chinese mulberry.

"On the 12th of May I set out several thousand of the Morus multicaulis, of which, I took for experiment 300 trees and set them on ten rods of ground, or 1-16th of an acre. Instead of setting the trees perpendicular, they were placed horizontally in the ground, forming a continued row of trees, in the following manner. Having ploughed a furrow five or six inches deep, I laid the roots and single stock in the furrow, so that the end of the stalk should be covered about two or three inches deep. The rows were three feet apart. From these 300 trees and roots so planted, I now have 3700 fine trees or shoots, which on the first day of August would average 2½ feet in height, with large substantial roots of the size of common goose quills.

"On the 25th of June I commenced feeding 6000 worms of the six weeks kind, on the foilage of these 3700 shoots, and on the first day of August, these 6000 worms were transformed into three bushels of the finest cocoons I ever saw, (each of which bushels I presume would reel at least 1¼ lb. of silk,) worth at least $15. By the 15th of September, from the same trees, I shall have sufficient foliage to feed 10,000 more worms. which would yield three or four bushels more. For the above 300 trees I paid 37½ cents each last spring, and estimate their product 3700, will be worth at least 25 cents each. or $925, and the 3 bushels of cocoons worth $15, making, $940 00

Deducting the cost of 300 trees last spring, - -	112 50
Ditto labor and expense of feeding the worms and land,	12 00
Leaving a profit on 300 trees, for the first year, of	$815 50

"Now if this should be carried out through the second and third year, as was done in the supposed case referred to, I think the result would exceed that of the *Silk Cabinet.*

"From the experience of the last and the present year, I consider that good cuttings on good land, will produce at least half a pound of foliage each.

"The writer in your last, has made allowance for cultivation, feeding of worms, gathering foliage and other items of deduction, which I do not think necessary, and instead of the result given for the second and third year being excessive, I must say, that in my opinion, from the experience I have had, and experiments made, the profits might have been greater than there made. I presume the object of the writer was merely to convince the public, that the culture of the mulberry and silk, might be made a lucrative employment, sufficiently so to encourage the culture of silk, to almost any extent.

"I consider it less labour to gather five pounds of foliage from the Chinese, or Morus multicaulis, than to gather one pound from the White mulberry. I have been engaged three years in the culture of the mulberry and manufacture of silk, constantly making experiments, and am fully satisfied that the business may be a profitable one to be pursued in families, as well as by corporations. It is my intention to erect a large cocoonery next fall or spring, upon a new and improved plan of my own invention, about which you may know more hereafter.

"At my establishment, about 100,000 trees of the Chinese or Multicaulis are under successful cultivation, and I am so well satisfied with the results of experiments already made, that a similar course will be pursued next year, as the most sure method for propagating the trees and increasing the quantity of foliage. I am daily removing the leaves and topping the sprouts, to check the growth of the tree and hasten the product of wood. Some of the sprouts have been cropped of their leaves three or four times without injury, and every succeeding crop of leaves is improved; although the size may be less, the number and weight have been increased.

"From my own experience, I am fully convinced, with Mr. Whitmarsh and Dr. Stebbins of Northampton, that the Chinese mulberry ought to be headed down every year, in order to multiply the tree and foliage, and that in this way the tree may be preserved during winter, *slightly* covering the stumps in the field, and the tops to be used as cuttings, the next year. In a large field, the stumps may have a light furrow turned over them with a horse plough. The roots left in the ground will be considered as permanent roots. Although it may be necessary or prudent, for the plants from *seeds*, *cuttings*, or *layer trees*, formed by bending down the side branches, to be removed to the cellar during winter, yet I do not consider that trees cultivated by burying the root and stalk early in the spring will need removal, on account of the early formation of roots, and presume they will make good standards.

"WARD CHENEY.

"*Manchester, Ct., August* 8, 1836."

On Silk in Italy.

Extract of a letter from General Tallmadge.

[FOM THE CULTIVATOR.]

"Finizio is an extensive manufacturer of sewing silk; he makes about 3,000 pounds a week, which is mostly sent to New York market. He is an intelligent man, and I found him willing to answer my inquiries; as also were several other establishments, and which mostly confirmed his statement. The sewing silks of Naples are mostly made from the silk grown in *Calabria*, where the worm is fed principally upon the *black* mulberry, and which makes the strongest

and best for sewing silk. Finizio stated that the worm fed on the black mulberry made the strongest thread; *that* on the *white* mulberry, finer and better for fabrics; *that* on the Chinese mulberry still finer and more delicate. When asked if the cocoon from the Chinese mulberry required more skilful and delicate work to wind and work it, he said it did, and immediately produced two skeins, one of which he said was from the black mulberry, (from a bush, perhaps, eight or ten feet in circumference,) the other from a bush about four feet. The lesser bush, he said, was less liable to break the thread in winding from the cocoon, and was used in finer silks for fabrics. The black mulberry produced a stronger thread, and would bear the larger real, and was principally used in that business. The silk here is mostly made in the country by families in detail, and much of it reeled there, and in this condition it is brought to market. For sewing silk it is doubled as often as required, and twisted as much. This process is wholly in a *dark room*. The silk is worked wet, and for this purpose, to preserve a uniformity, the atmosphere is kept damp, the day-light excluded, and the work carried on with small hand lamps. The machine was turned by men harnessed like mules. I have since been out about twenty miles to the silk factory of the king, which is worked by water power, and by which the cocoons are also reeled. I stated to Finizio, as also the king's factory, that the Italian sewing silk was sold in the American markets by its weight, while the American sewing silk was sold by the skein; and that one pound of the Italian would have perhaps 250 skeins, while one of the American silk would have about 350 skeins. The cause of this difference of weight, or why the American sewing silk has tendency to curl or knot, they could not explain without a sample, but said the weight of sewing silk could be diminished or very considerably augmented in the *dyeing*, and that good dyeing required the silk to be well *boiled* in *soap*, after which it was put into an acid, and was there prepared for the process of the dye, according to the colour, as desired. The gloss, or dressing, seems to be produced by beating and twisting on a post, which, with the manual labour put upon its finish, it is supposed, prevents its tendency to knot.

"I asked if the colour the cocoon, yellow or white, gave any difference of value, or indicated a sickly worm, and the answer was that the colour was casual, and the value the same; that a selection of white or yellow cocoons from which to get eggs would probably produce a like colour; and Mr. Finizio, said he had some customers who had so selected and brought him *cocoons* entirely *white*; and that for white ribbands or fabrics, they commanded a greater price of from three to five per cent, though otherwise of equal value."

Beet Sugar.

[FROM THE COLUMBIA, S. C. TELESCOPE.]

Mr. Editor:—Forty years ago Oliver Evans of Philadelphia, called the attention of the public to the prodigious advantages that might be obtained from the use of Steam Engines; and introduced among us (a couple of years after Trevethicks patent in England, the high pressure Engine. But he made experiments, however conclusive, to his own loss only: he was too much ahead of the knowledge of the day. Those who saw his experiments doubted their own senses, and "like the deaf adder, turned their ears from the voice of the charmer, charm he never so wisely."

In 1811 Dr. Thomas Cooper delivered his introductory lecture on Chemistry at Carlisle in Pennsylvania, which he immediately published with notes. In one of those notes, he recommended strongly the use of Locomotive Steam Engines, and detailed a series of experiments in England on the great superiority of this form of power. This too was a notice somewhat too early for the level of knowledge at the time. But the war breaking out with England, and the articles on the Steam Engine in Cooper's Emporium, gave a stimulus to domestic exertion and invention, and Steam Engines have prospered with astonishing success from that time forward.

The first volume of Dr. Cooper's Emporium was published in 1813. In p. 179 of that volume is the following by that gentleman of BEET SUGAR.

"I observe in some late numbers of the *Moniteur*, a Paris newspaper, that up to April, 1812, (Moniteur of 19th April of that year,) 214 licences had been taken out for the manufacture of Sugar from Beets, in France. Hence I presume it must be, not only a practicable, but in that country a profitable concern, or the tax would not be paid for the license.

"Klaproth who repeated Achard's experiments on this subject at Berlin, procured from 25 beets, which when topped and scraped weighed thirty-two pounds and a half, nineteen pounds and three quarters of juice by expression. The squeezed residuum was boiled in water, and again pressed. The liquors added together were boiled to a syrup, strained, and slowly evaporated. The raw sugar amounted to two pounds and twelve ounces, about one fourteenth of the raw beet. (An acre of beets may be reckoned at from 10 to 16 tons.)

"The King of Prussia in the fall of 1799 appointed a committee to repeat these experiments. They did so. From 1500 lbs. of beet root they obtained 393 lbs. of syrup which yielded 57 lbs. of tolerably white powder sugar. This was in the proportion of somewhat more than one twenty-sixth part of the weight of the beets."

In the same volume of the *Emporium*, the Editor (Dr. Cooper) notices the experiments for producing sugar from grape juice, and sugar from starch. The present Mr. Dupont of the powder manufactory near Wilmington in Delaware, procured from rice ninety-four parts out of 100, of molasses.

By the exertions of Messrs. Ronaldson, Vaughan, and Snider, of Philadelphia, the manufacture, &c. of beet sugar is likely to be introduced into the United States, and successfully. I observe it noticed in the papers, that one manufacturer of steam engines in a Northern State, has orders for 27, to be employed in the manufactory of sugar from beets. The produce at first to be expected, is 6 per cent. Some of the French manufacturers procure 8 per cent from the beet. The squeezed residuum is excellent food for cattle. (See the report on this subject by Mr. Pedder, lately published in Philadelphia.)

Messrs. Ronaldson, Vaughan, & Snider, of Philadelphia, three men whose object is to incur expense for the good of the public, without benefit to themselves, have procured from France a considerable quantity of the best seed of the sugar beet. I understand Mr. Russel, of Columbia, has purchased a part of it, sufficient for the supply of those who wish to make an experiment on the culture of the best kind of beet whether for the table, or for sugar. The beet requires a rich deep soil, to flourish in perfection. B.

Cutting up Corn by the Roots.

[FROM THE GENESEE FARMER.]

There has been much said this season about the corn crop, and it must be confessed that, owing to the coldness of the season, the corn harvest promises little to glad the heart of the husbandman. Much complaint has been heard in relation to the seed not germinating, and many impute it to the practice of cutting up corn by the roots; but this I know to be a mistake, having followed that practice for the last 18 years, yet never failed of having good seed in consequence of it.

It is true, that if corn is cut up and crowded into large bunches or stacks when damp, its germinating powers will be destroyed by the heat generated thereby, but if put up in small stacks, free from water, and well secured, the corn, when husked, will be found of the first quality. If corn thus saved is to be removed to the barn for husking, care should be taken not to crowd too much together, as it will heat in three or four days sufficiently to make it sprout, thus spoiling it for seed, as well as rendering it less valuable for domestic purposes. When corn thus cut up is husked in the field, the best ears should be selected for seed, being careful to leave sufficient husks on them for braiding them into bunches, to be hung up in a dry and secure place till needed for use.

Of the various modes of harvesting corn, I consider that of cutting it up by the roots as the preferable one, and especially if nipped by a premature frost, since more sound corn will thereby be produced, while the stalks, if well cured, will make most excellent fodder, which of itself is sufficient to pay for cutting and harvesting the corn. I have known many farmers, after their stalks had been cured, husk their corn in the field, and through carelessness suffer the fodder to remain in the field exposed to autumnal rains till spoiled. This, to say the least of it, is a needless waste, and an evidence of a slovenly farmer.

Sheffield, Aug. 13, 1835. J. S. P.

Note by the Transcriber.—I once had a field of corn struck by a severe frost in the latter end of August, the corn then being completely filled, though the glazing process had but partially commenced round the root of the ears. We supposed the crop spoiled, but at the suggestion of a friend, took scythes just at the opening of day, and before the sun had risen sufficiently high to dispel the frost, most of the corn was prostrate. The consequence was, that the warmth exhaling from the earth dispelled the frost, and no appearance of it was perceptible after the sun had exerted its influence on the stalks as they lay prostrate. In the afternoon the corn was gathered into small stacks, secured, and left to ripen. When the period for husking arrived, my corn came forth bright and sound, superior in fact to any I had before raised.

Cline on the Formation of Animals.

[FROM THE FARMERS' REGISTER.]

Sir,—It is not long since I returned from an agricultural excursion through some of the most interesting portions of England and Scotland. Being at Holkham, Norfolk, the seat of Thos. Wm. Coke, Esq. I met a large party of agriculturists whose attention was much devoted to the improvement of stock. Mr. Coke distributed, in small pamph-

let form, a concise statement of the general principles by which he had for years been governed, in the selection and breeding of his stock—which is acknowledged to be among the finest in that country.

I was not so fortunate as to obtain a printed copy of the pamphlet, but subsequently procured a manuscript copy, which I place at your disposal, hoping you will give it an insertion in the Register, if you deem it worthy of being laid before your readers. P. H.

On the form in general.—The form of domestic animals has been greatly improved, by selecting with much care the best formed for breeding: but, the theory of improvement has not been so well understood, that rules could be laid down for directing the practice. There is one point particularly, respecting which, the opinions of breeders have much varied, which is, whether crossing the breed is essential to improvement.

It is the intention of this communication to ascertain in what instances crossing is proper, and in what prejudicial; and the principles on which the propriety of it depends.

It has generally been supposed that the breed of animals is improved by the largest males. This opinion has done considerable mischief, and would have done more injury if it had not been counteracted by the desire of selecting animals of the best form and proportion, which are rarely to be met with in those of the largest size.

Experience has proved, that crossing has only succeeded in an eminent degree, in those instances in which the females were larger, than in the usual proportion of females to males; and that it has usually failed, when the males were disproportionally large.

The internal form of domestic animals has been much studied, and the proportions are well ascertained. But the external form is an indication only of internal structure. The principles of improving it, must therefore be founded on a knowledge of the structure and use of internal parts.

The lungs are of the first importance. It is on their size and soundness, that the health and strength of an animal principally depends: their power of converting food into nourishment, is in proportion to their size. An animal with large lungs, is capable of converting a given quantity of food into more nourishment than one with smaller lungs: and therefore, has a greater aptitude to fatten.

The Chest.—The external indications of the size of the lungs, are the size and form of the chest, the form of which should approach to the figure of a cone, leaving its apex situated between the shoulders, and its base towards the loins. The capacity of the chest depends on its form more than on the extent of its circumference, for where the girth is equal in two animals, one may have much larger lungs than the other. A circle contains more than an ellipsis of equal circumference, and in proportion as the ellipsis deviates from the circle, it contains less. A deep chest, therefore, is not capacious, unless it is porportionately broad.

The Pelvis.—The pelvis is the cavity form by the junction of the haunch-bones with the bone of the rump. It is essential that this cavity should be large in the female, that she may be enabled to bring forth her young with the less difficulty. When this cavity is small, the life of the mother and her offspring is endangered. The size of the pelvis is chiefly indicated by the with of the lips, and the breadth of twist, which is the space between the thighs. The breadth of the loins is always in proportion to that of the chest and pelvis.

The Head.—The head should be small, by which the birth is much facilitated; the smallness affords other advantages, and generally indicates that the animal is of a good breed. Horns are useless to domestic animals, and they are often causes of accidents. It is not difficult to breed animals without horns. The breeders of horned cattle and horned sheep, sustain a loss more extensive than they may conceive; for it is not the horns alone, but also much more bone in the skulls of such animals to support their horns, for which the butcher pays nothing; and besides this, there is an additional quantity of ligament and muscle in the neck, which is of small value. The skull of a ram with its horns weighed five times more than another skull which was hornless. Both these skulls were taken from sheep of the same age, each being four years old. The great difference in weight depended chiefly on the horns, for the lower jaws were nearly equal; one weighing seven ounces, and the other six ounces and three-quarters, which proves that the natural size of the head was nearly the same in both, independently of the horns, and the thickness of bone which supports them. In a horned animal, the skull is extremely thick. In a hornless animal, it is much thinner, especially in that part where the horns usually grow. To those who have not reflected upon the subject, it may appear of little importance whether sheep and cattle have horns or no; but on a moderate calculation it will be found that the loss in farming stock, and also in the diminution of animal food, is very considerable, from the production of horns and their appendages. A mode of breeding which would prevent the production of these, would afford a considerable profit in an increase of meat and wool and other valuable parts. The length of the neck should be proportioned to the heighth of the animal, that it may collect its food with ease.

The Muscles.—The muscles, and tendons which are their appendages, should be large, by which an animal is enabled to travel with greater facility.

The Bones.—The strength of an animal does not depend on the size of the bones, but on that of the muscles. Many animals with large bones are weak, their muscles being small. Animals that were imperfectly nourished during growth, have their bones disproportionately large. If such deficiency of nourishment originated from a constitutional defect, which is the most frequent cause, they remain weak during life. Large bones, therefore, generally indicate an imperfection in the organs of nutrition.

On the Improvement of Form.—To obtain the most approved form, two modes of breeding have been practised; one by the selection of individuals of the same family, called breeding in and in: the other, by selecting males and females from different varieties of the same species, which is called crossing the breed. When a particular variety approaches perfection in form, breeding in and in may be the better practice; especially for those who are not well acquainted with the principles on which improvement depends. When the male is much larger than the female, the offspring is generally of an imperfect form. If the female be proportionably larger than the male, the offspring is of an improved form. For instance, if a well-formed large ram be put to ewes proportionably small, the lambs will not be so well-shaped as their parents; and if a small ram be put to large ewes, the lambs will be of an improved form. The proper method of improving the forms of animals, consists in selecting a well formed female proportionably larger than the male. The improvement depends on this

principle, that the power of the female to supply her offspring with nourishment, is in proportion to her size, and the power of nourishing herself from the excellence of her constitution. The size of the fœtus is generally in proportion to that of the male parent, and therefore when the female parent is disproportionably small, the quantity of nourishment is deficient, and the offspring has all the disproportions of a starvelling. But when a female, from her size and good constitution, is more than adequate to the nourishment of a fœtus of a smaller male than herself, the growth must be proportionably greater. The larger female has also a greater quantity of milk, and her offspring is more abundantly supplied with nourishment after birth. To produce the best formed animals, abundant nourishment is necessary from the earliest period of its existence until its growth is entire. It has been observed in the beginning of the paper, that the power to prepare the greatest quantity of nourishment from a given quantity of food, depends principally on the magnitude of the lungs, to which the organs of digestion are subservient. To obtain animals with large lungs, crossing is the most expeditious, because well formed females may be selected from a variety of a large size, to be put to a well formed male of a variety that is rather smaller. By such a method of crossing, the lungs and heart become proportionably larger, in consequence of a peculiarity in the circulation of the fœtus, which causes a larger proportion of the blood under such circumstances, to be distributed to the lungs, than to the other parts of the body, and as the shape and size of the chest, depend on that of the lungs, hence arises the remarkably large chest which is produced by crossing with females that are larger than the males. The *practice*, according to this principle of improvement, however, ought to be limited, for it may be carried to such an extent, that the bulk of the body might be so disproportioned to the size of the limbs, as to prevent the animals from moving with sufficient facility. In animals where activity is required, that practice should not be extended so far as in those which are intended for the food of man.

On the Character of Animals.—By character in animals is here meant those external appearances by which the varieties of the same species are distinguished. The characters of both parents are observed in their offspring, but that of the male most frequently, predominates. This may be illustrated in the breeding of horned animals, among which there are many varieties of sheep, and some of cattle, which are horned. If a hornless ram be put to a horned ewe almost all the lambs will be hornless, partaking of the character of the male, more than of the female parent. In some counties, as Norfolk, Wilkshire, and Dorsetshire, most of the sheep have horns. In Norfolk, the horns may be got rid of by crossing with Ryland rams, which would also improve the form of the chest and the quantity of the wool. In Wilkshire, and Dorsetshire, the same improvement might be made by crossing the sheep, with South-down rams. An offspring without horns might be obtained from the Devon cattle, by crossing with the hornless bulls of the Galloway breed. This would also improve the form of the chest, which the Devons are often deficient in.

Examples of the good effects of Crossing the Breed.—The great improvement of the breed of horses in England arose from crosses with the diminutive stallions, Barbs, and Arabians; and the introduction of Flanders mares into this country, was the source of improvements in the breed of cart horses. The form of swine has also been greatly improved by crossing with the small Chinese boar.

Examples of the bad effects of Crossing the Breed.—When it became the fashion in London to drive large bay horses, the farmers in Yorkshire put their mares to much larger stallions than usual, and thus did infinite mischief to their breed by producing a race of small chested, long legged, large headed, worthless animals. A similar project was adopted in Normandy to enlarge the breed of horses there, by the use of stallions from Holstein, and in consequence the best breed of horses in France would have been spoiled had not the farmers discovered their mistake in time, by observing the offspring much inferior in form to that of the native stallions. Some graziers in the Isle of Shepley conceived that they could improve their sheep by large Lincolnshire rams, the produce of which was, however, much inferior in the shape of the carcase, and the quality of the wool, and their flocks were greatly injured by this attempt to improve them.

Attempts to improve the native animals of a country, and by any plan of crossing, should be made with the greatest caution, for by a mistake in practice, extensively pursued, irreparable mischief may be done. In any country where a particular race of animals has continued for centuries, it may be presumed that their constitution is adapted to the food and clime. The pliancy of the animal economy is such, as that an animal will gradually accommodate itself to very great vicissitudes in climate and alterations in food, and by degrees undergo great changes in constitution, but these changes can be effected only by degrees, and may often require a great number of successive generations for their accomplishment. It may be proper to improve the form of a native race, but at the same time it may be a very injudicious attempt to enlarge the size. The size of animals is commonly adapted to the soil which they inhabit. Where produce is nutritive and abundant, the animals are large, having grown proportionally to the quantity of food which for generations they have been accustomed to obtain. Where the produce is scanty, the animals are small, being proportioned to the quantity of food which they are able to procure, of these contrasts the sheep of Lincolnshire, and of Wales, are examples. The sheep of Lincolnshire would starve on the mountains of Wales.

Crossing the breed of animals may be attended with bad effects in various ways, and that even when adopted in the beginning on a good principle; for instance, suppose some larger ewes, than those of the native breed were taken to the mountains of Wales and put to the rams of that country—if these foreign ewes were fed in proportion to their size, their lambs would be of an improved form, and larger in size than the native animals; but the males produced by this cross, though of a good form, would be disproportionate in size to the native ewes, and therefore, if permitted to mix with them, would be productive of a starvling ill-formed progeny. Thus a cross which was at first an improvement would, by giving occasion to a contrary cross, ultimately prejudice the breed. The general mistake in crossing has arisen from an attempt to increase the size of a native race of animals, being a fruitless effort to counteract the laws of nature. The Arabian horses are in general the most perfect in the world; which probably has arisen from great care in selection, and also from being unmixed with any variety of the same species; the males, therefore, have never been disproportioned to the size of the females. The native horses of India are small, but well proportioned, and good of their kind. With the intention of increasing their size, the India Company have adopted a plan of sending large stallions to India. If these stallions should

be extensively used, a disproportionate race must be the result, and a valuable breed of horses may be irretrievably spoiled. From theory, from practice, and from extensive observation, which is more to be depended on than either, it is reasonable to form this

Conclusion.—It is wrong to enlarge a native breed of animals, for in proportion to their increase of size, they become worse in form, less hardy, and more liable to disease.

Keeping Stock—a Dialogue.

[FROM THE MAINE FARMER.]

Mr. Holmes,—Being present, when the following *Dialogue* took place, between two farmers, and as winter is approaching, I think it may be useful to publish it, for the information of those who may keep stock next winter.

A. A yoke of oxen which girt six feet six inches, cannot be kept in good flesh in winter, on less than 50 pounds of good English hay per day, or 1500 a month, without labour, by giving as much as they will eat—which is the only way to keep up their flesh.

B. There is no sort of need of their consuming such a quantity, or so much expense, per day—in the first place they will keep their flesh full as well by giving them something less than they will eat, if given to them; thus kept, their appetites will always be sharp and good, and they will better relish their food, and of course it will nourish them as much more, and there will be no waste, in the next place. Much may be saved in the expense, by mixing straw, or poor hay, well with the good; if thoroughly mixed, they cannot avoid eating the less expensive hay. As all animals, (man not excepted,) are fond of a change of *diet*, much hay may be saved by browse and a few roots. Thus I can keep a yoke of oxen for half the expense you name.

A. But it must take some time and trouble to mix the hay, straw, &c., in the manner you propose, and I have been in the habit of feeding my cattle without this trouble, and giving them what they will eat.

B. So I apprehended, and I was not clear but that you was so sparing of your trouble, that you neither carded you oxen, or see that they drank when they needed water, or that they were littered properly, and of course laid happily. Much depends, my friend, on these *little things*, if you desire to save hay, which we both agree, is of no small consequence this year, or indeed any year.

A. I will try your mode of keeping cattle, and if it succeed, I shall be much obliged, for my purse will not be drained as I expected, in keeping my stock through the approaching foddering time.

B. I am satisfied that good wheat straw, and a small quantity of roots every day, will keep up their flesh, without any hay in cold winter weather, this has been sufficiently tried. By this time I hope you are satisfied that stock may be kept much cheaper than you had supposed, if you are, you will not sacrifice them this fall.

A. I certainly shall not, until I have tried your mode of wintering stock—if it succeeds, it must be of great consequence to farmers, even in seasons when hay is not very dear.

B. Why should we not learn something, by being deprived by Providence of the usual quantity of forage?

Great Invention in Fire Arms.

[FROM THE NANTUCKET ENQUIRER.]

The Boston Atlas notices at some length, the very important invention, by a young man named Cochran, a native of New Hampshire, of what are denominated the "Many chambered, Non-recoil," fire arms. Through the instrumentality of Mr. G. Gay of Providence, now in this place, we were some time since made acquainted with the properties of this wonderful improvement in the construction of cannon, rifles, muskets and pistols—for to all these the invention has been adapted—and should have sooner noticed the subject, but that we were waiting for an actual inspection of some specimen. This opportunity has been promised; and it is expected that one of the rifles, already sent for by Mr. Gay, will soon be ready for exhibition to those of our citizens who feel an interest in the protection of their property upon the ocean, against pirates or hostile savages.

These weapons are so contrived, that by means of a metallic cylinder, or wheel, revolving on an axis immediately in the rear of the barrel, some twelve discharges may be made in rapid succession: insomuch that by a little practice, the loading and firing of the whole twelve may be performed in little more time than is now required for a single charge and discharge of a common rifle. This wheel is perforated at the periphery, with cavities or chambers, to contain the charges, of a calibre corresponding with that of the barrel; and the charges are ignited by means of percussion caps inserted in a smaller hole at right angles with the above cavity, and striking the centre of the charge. In large ordinance, the wheel or cylinder revolves vertically; but in small arms it has a horizontal motion, with the lock or igniting apparatus underneath. The wheel passes round by means of proper guides, and as fast as each charge arrives opposite the breach of the barrel, it may be exploded. As our description is derived only from verbal testimony, it may not be entirely accurate, or even intelligible; but we are satisfied that the extraordinary effects ascribed to the invention are by no means overrated or misrepresented. Mr. G. informs us that he has discharged several hundred shots from one of the rifles; and after the closest attention he could discern no recoil whatever. The cannon may be discharged easily, twelve times per minute—and a succession of loading and firing may be kept up for almost any length of time. The shot are also driven to a greater distance than by the common method; and a less quantity of powder is used in the process.

Respecting the inventor, who is short of 25 years of age, we have the following particulars, which we abridge from the Atlas: having obtained a patent in this country, he proceeded to England and France, where his invention was also readily patented, after a series of expements made in presence of distinguished naval and military officers, at London and Paris. The Turkish ambassador, who witnessed the tremendous results, induced Mr. Cochran to go to Constantinople—where he was most kindly received by the Sultan, who loaded the ingenious artist with presents, after ordering a twelve pounder to be constructed on this principle, under the inspection of Mr. C. at the public laboratories, and attending in person, with his whole court, at the trial. Mr. Cochran resided six months at the Turkish capital, receiving the most marked distinction from the government. He then returned to this country, and established a manufactory at Springfield, in this Com-

monwealth, at which small arms and cannon of various dimensions are now being made, chiefly to order. for sportsmen, &c. or for experiment, by the ordinance officers of the United States. A piece of brass ordinance is now in course of construction at Troy, and another at West Point, under the direction of the inventor.

Besides the facility and rapidity with which these weapons may be discharged, the rifles, &c. possess many other advantages over all others. There is nothing upon the barrel to obstruct or confuse the sight—the surface being perfectly smooth; they never miss fire, and are little liable to accident. Our whale ships generally carry a number of muskets: but we are persuaded that nothing yet contrived by human ingenuity for security against capture or plunder at sea, can in any shape compete with the implement under notice. We are therefore anxious that ship owners, and others interested at this place, may examine this new and most effectual engine of destruction, and from its peculiar principle of action, judge of its terrific powers. With these deadly instruments, and plenty of ammunition, a single man may disperse a score of pirates, and a small crew contend triumphantly against myriads of barbarians.

Agricultural Establishment at Moegelin, in Prussia.

[FROM JACOB'S TRAVELS IN GERMANY.]

About twelve or thirteen years ago, the King of Prussia, who, like his uncle, was always anxious to extend and improve the agriculture of his dominions, invited Von Thaer, who resided near Lunenburg, and whose celebrity was even then great, to settle in his kingdom, to assist in diffusing agricultural knowledge, and, by his management, set an example to the other great landed proprietors, which might stimulate them to adopt similar improvements. His majesty also wished him to conduct a seminary, in which the knowledge of the sciences might be applied to husbandry, for the instruction of the young men of the first families.

The estate of Moegelin was given to him to improve and manage, as a pattern farm. It consists of eighteen hundred Berlin morgens, or about twelve hundred English acres. At that time the annual value was estimated at two thousand rix dollars,* but is now supposed to be worth twelve thousand; but some part of that increased value must arise from the buildings that have been since erected. The principal improvement, that of the soil, has arisen from the large flows of sheep, which in summer are folded on the land, and in winter make abundant manure, in houses constructed for their lodging.

The Royal Institution, of which Von Thaer is the director, and which occupies a considerable portion of his extensive buildings, has three Professors besides himself. One for Mathematics, Chemistry, and Geology, one for Veterinary knowledge; and a third for Botany, and the use of the different vegetable productions in the Materia Medica, as well as for Entomology. Besides these, an experienced agriculturist is engaged, whose office it is to point out to the pupils the mode of applying the sciences to the practical business of husbandry. The course commences in September. During the winter months, the time is occupied in mathematics, and the first six books of Euclid

*A rix dollar is seventy-five cents.

are studied; and in the summer, the geometrical knowledge is practically applied to the measurement of land, timber, buildings, and other objects. The first principles of chemistry are unfolded. By a good, but economical apparatus, various experiments are made, both on a large and small scale. For the larger experiments, the brew-house and still-house, with their respective fixtures, are found highly useful.

Much attention is paid to the analyzation of various soils; and the different kinds, with the relative quantity of their component parts, are arranged with great order and regularity. The classification is made with neatness, by having the specimens of soil arranged in order, and distinguished by different colours. Thus, for instance, if the basis of the soil be sandy, the glass has a cover of yellow paper; if the next predominating earth be calcareous, the glass has a white ticket on its side; if it be red clay, it has a red ticket; if blue clay, a brown one. Over these tickets, others of a smaller size indicate, by their colour, the third greatest quantity of the particular substance contained in the soil. This matter may appear to many more ingenious than useful, and savouring too much of the German habit of generalizing. The classification of Von Thaer is, however, as much adopted, and as commonly used on the large estates of this country, where exact statistical accounts are kept, as the classification of Linnæus in natural history is throughout the civilized world.

There is a large botanical garden, arranged on the system of the Swedish naturalist, kept in excellent order, with all the plants labelled, and the Latin as well as the German names. An herbarium, with a good collection of dried plants, which is constantly increasing, is open to the examination of the pupils, as well as skeletons of the different animals, and casts of their several parts; which must be of great use in the veterinary pursuits. Models of agricultural implements, especially of ploughs, are preserved in a museum, which is stored as well with such as are familiar in Germany, as with those used in England or other countries. I remarked the absence but of two things used in this country, viz. the mole plough, and a new machine invented for sowing small seeds. The first of these would certainly be of little use in most parts of Germany; and the other is so new, that, excellent as it is, its adoption is by no means general, even in England.

The various implements used on the farm are all made by smiths, wheelers, and carpenters, residing round the institution; the workshops are open to the pupils; and they are encouraged, by attentive inspection, to become masters of the more minute branches of the economy of an estate.

It appeared to me, that there was an attempt to crowd too much instruction into too short a compass; for many of the pupils spend but one year in the institution; and thus only the foundation, and that a very slight one, can be laid in so short a space of time. It is, however, to be presumed, that the young men come here prepared with considerable previous knowledge, as they are mostly between the ages of twenty and twenty-four, some few appeared to be still older.

The sum paid by each pupil is four hundred rix dollars annually; besides which, they provide their own beds and breakfasts. In this country, such an expense precludes the admission of all but youths of good fortune. Each has a separate apartment. They are very well behaved young men; and their conduct to each other, and to the professors, was polite even to punctilio.

PAGINATION INCORRECT

As I have not had an opportunity of visiting Hofwyl, and have met with no account of that Institution, written by any person who is well acquainted with many details on the subject of its agriculture, I cannot make a comparison between that widely-blazoned establishment, and the unostentatious Institution of Moegelin. I was indeed told that the plan and effects were far inferior; but, as my informants were Prussians, I make some allowance for the national vanity, which felt itself piqued that the establishment in Switzerland should be praised most highly, and their Royal Foundation be unknown beyond the boundaries of the kingdom to which it belongs.

Palma Christi.

Extracts from the Report of Professor Ducatel's Survey of Maryland.

[FROM THE FARMERS' REGISTER]

"An attempt was made in the Report of last year, to excite the interest of the farmers in Queen Anne and Caroline counties, in behalf of this new crop. It is to be regretted that they have not extensively, if at all, availed themselves of the suggestion—the bean having increased in value far beyond the most sanguine anticipations. There ought to be, therefore, no further delay to the introduction of this growth as one of the staple commodities of Maryland. Without having been as yet able to ascertain the precise cause of the extraordinary demand for this article, within a few years, there is still reason to believe that the call for it will continue to be great; since, notwithstanding its extended cultivation in consequence of the high prices obtained in preceding years, it now commands a higher price than at any other former period. It has been stated that the oil expressed from the bean is employed in large quantity in the manufactories of England for greasing the machinery by which these establishments are put into operation.

"The culture of the *palma christi* presents no difficulty. It is said to thrive best in good corn lands, yielding, according to the quality of the soil, from twenty-five to forty bushels per acre. The land requires the same preparation as for corn; and the bean is planted like this grain,—in hills on which two or three plants are suffered to grow; the subsequent tillage being also the same as that practised for corn. The most tedious part of the management of this crop is the gathering of the fruit, which forms a cluster with a pyramidal termination; the lower portion being occupied by the male flowers that yield no seed, and the upper by the female flowers. In the female flowers, the ovary, which is roundish and three-sided, supports three linear reddish stigmas, forked at their apex. The fruit, properly speaking, is a round capsule, with three projecting sides, covered with rough spines, and divided into three cells, each containing one seed. The flowers appear in July, and the seed ripens throughout August and September. If suffered to do so on the plant, the capsule bursts with considerable force, projecting the seed at a distance, and scattering it about the field. To avoid this is the only extra attention required by this growth, and this is done by anticipating the maturity of the fruit. The directions are,—to visit the plantation a little before the commencement of the ripening reason, removing those clusters that approach to maturity, (which is known by a change of colour, from grayish green to a light pea green,) and conveying them to the drying ground, where, by the effect of the sun's heat, they burst, and dislodge their seeds. The only

preparation of the drying ground is to provide a small place, cleaned and levelled as for a threshing floor, upon which the clusters are scattered. It would be advisable to locate this spot in the neighbourhood of the barn, or near a shed, so as to facilitate the removal of the plants, in the case of protracted wet weather, to some sheltered situation. Transient showers of rain do not, however damage it, otherwise than by blackening the seed, whereby the sale might be injured, although it does not diminish its productiveness in oil. The occupation of gathering having once commenced, it should be so arranged as to visit each plant twice a week, morning and evening, until the whole crop has been secured. It may then be sent to a market, where, at the time of writing this Report, it commands three dollars a bushel; or, it may be made to yield its oil by the following process, as practised in Northampton county, Virginia.

"The seeds are first to be thoroughly cleaned of dust, and of portions of the capsules that may have adhered to them. They are then introduced into shallow iron drawers, arranged on both sides of a furnace, where they are exposed to a gentle heat; the object of this first operation being to render the oil more easy of expression. From these drawers they are conveyed into a powerful screw-press, by the operation of which the oil is obtained. So far, however, the oil is impure: It must now, therefore, be transferred to clean iron boilers, previously supplied with water. As the boiling proceeds, the impurities that rise to the surface are skimmed off, and the clear purified oil finally makes its appearance, floating on the water. It is now carefully removed, and a second time subjected to the boiling process, with a very small quantity of water, until the latter liquid has been entirely dissipated. This is ascertained by taking out a small portion into a vial, and observing whether it preserves its transparency as its cools. Some care is required not to push the heat too far, as then the oil would acquire a brownish hue and a hot peppery taste, which would at all events unfit it for use as a medicine. One bushel of seeds yields about one gallon and three-quarters of oil, at an expense of about 25 cents a bushel, which is refunded by the sale of the *pumice*, found to be excellent manure for corn crops. Acknowledgments are due to Mr. Smith, of Northampton county, Va. an intelligent and experienced planter of palma christi, and manufacturer of castor oil, in the vicinity of Eastville, for information contained in the above paragraphs."

Smoking Meat.

[FROM THE GENESEE FARMER.]

Extract of a letter from a subscriber at Cincinnati:

"How 'doctors disagree.' I entirely differ from one of your correspondents about smoking meat. I would have a perfectly air tight smoke-house, preferably of stone or brick—if of log, plastered, and the meat kept constantly in the dark. If it contracts a slight mould, so much the better. No insect will breed in such an atmosphere. There is no occasion of putting meat intended for smoking into pickle. Let it be properly salted, and before hanging it up let it be washed in hot lie. Let it hang till it is dry before smoke is made under it. Green hickory wood is best to make smoke. I have never had spoiled meat. Besides, it will be found the least troublesome way, and very safe, as but little fire is required to have smoke enough."

PART III.

MISCELLANEOUS INTELLIGENCE.

A method recommended to all cleanly housekeepers to prevent an accumulation of dust.---Fill the walks leading from the garden, kitchen and yard, to the dwelling house, with hard pine saw-dust, three or four inches deep; its sponginess will readily keep it dry;---it will readily take the mud from the shoe, and every rain will wash the deposit through the mass of saw-dust to the bottom, keeping the top clean, and it will last you for years. It looks clean, and has an agreeable smell when fresh.

Rohan Potato.---A new variety of the potato has been imported from Switzerland, which is said to surpass all others in size, productiveness and quality. As a proof of its astonishing productiveness, it is stated that forty-eight pounds have been produced from one small root, weighing less than half an ounce. We have no doubt of its being a valuable variety, but that it will yield an increase any thing like the statement we do not believe It is more than *fifteen hundred fold*, as a few figures will show. We learn that a few have been planted the present season in Green county, (N. Y.) and hope to hear more about them after they are harvested.---*Silk Culturist.*

Hessian Fly and Wheat Insect.---Good entomologists are few in proportion to other cultivators of the sciences. When their attention is directed, therefore, to such insects as interfere with our rural economy, and successfully point out to us practicable methods for counteracting such invaders of our rights, we are always thankful---though we have to regret that *to be useful* seems to have occupied less of their attention than the interests of gardening and agriculture demands. The following extracts are from a letter which we lately received, and were written by one who has looked closely into such matters. We only add that he is a practical farmer.---*Genesee Farmer.*

"The Hessian fly and wheat insect, both belong to the same genus, called *Cecidomyia* by modern entomologists. *Tipula*, I believe, was the old genus from which the former was separated. * * * *

"The best and most interesting part of the story has not been told:---The Hessian fly is destroyed by a minute but formidable enemy, called the *Ceraphron destructor* by Say; and the wheat insect by *two* enemies that destroy it in the same manner as the ichneumon does the caterpillar. [That is to say, they deposit their eggs in the skin, and the larvæ which hatch out from those eggs, then feed on the living caterpillar, or wheat insect, till they destroy it.]

"I see no good cause for alarm either on account of the Hessian fly or of the wheat insect, as both are thinned by their winged enemies, and sometimes nearly extirpated. If our winter had been an ordinary one, we should have had tolerable crops of wheat in despite of the fly. The more I become acquainted with the habits and manners of insects, the more I have to admire the wisdom and goodness of God as manifested in the creation."

Cut Worm.—Every farmer has experienced serious losses in his corn crops from the ravages of the grub, or cut worm, and nothing has hitherto been discovered which will effectually prevent or arrest its destructive depredations. A writer in the United States Gazette thinks the following a sovereign remedy:---"Take one gallon of common fat or slush, and one quart of spirits of turpentine; let them be put together in a tight barrel, having but one head, and being well stirred, and half a bushel of unslacked lime. In this condition the lime should be carefully slacked, and ultimately mixed with the other ingredients, and water gradually added until the barrel is full. As soon as the corn makes its appearance above

the ground, let a portion of the mixture be applied by means of a common watering pot, to the amount of about a tea cup full to each hill of corn, and there is scarcely a doubt but that the worm will vacate the identical spot from the abhorrence that all kinds of worms and insects have to even the smell of turpentine." The writer is confident, from analogy, that this simple remedy will be found an effectual preservative against the attacks of this destructive insect. As it would be attended with trifling labour and expense, it ought to be thoroughly tested by experiment.---*Silk Culturist.*

—

Improvement in the manufacture of Beet Root Sugar.---In a memoir addressed to the Society for the Encouragement of National Industry in France, M. Desormes alleges that the use of animal charcoal in grains for filtering the sirup, and the employment of large quantities of this decolorizing principle, is the greatest improvement recently made in the manufacture of sugar from beets. The charcoal is heated in tin plates, and finally on a cast-iron plate nearly red hot, by which the vegetable matters absorbed by it are decomposed, and the material is again fit for use in removing the colour from the sirup. He states the amount of bone charcoal which may be profitably used, as high as one hundred and fifty per cent. of the weight of sugar to be obtained---*Bull. Soc. d'encouragement.*

—

Importation of Sugar Beet Seed.---The Town Committee of Northampton, (Mass.) have contracted with Samuel Whitmarsh, Esq. to import from France $300 worth of sugar beet seed, in time for sowing the next season. He is to deliver it at Northampton, at cost and charges, to such persons as previously engage to take to the amount of $10. The committee have called upon such gentlemen as wish to avail themselves of so favourable an opportunity to furnish themselves with seed to send in their names. Should there be a surplus, it is to be sold in small quantities to the citizens of Hampshire county.---*Silk Culturist.*

—

Silk Print Works ---The Philips Mills, at Lynn, (Mass.) have recently been purchased by Henry A. Breed, Esq. and thoroughly repaired A new brick building, 83 by 40 feet and five stories high, has also been erected for the printing of silks and ginghams. The goods put up at this establishment are said to surpass in beauty any thing of the kind in this country. Many families, chiefly Irish, are already in the employment of the proprietor, and we learn he is about forming a company, with a capital of $100,000, for the energetic prosecution of this branch of the silk business.---*Ib.*

—

Patent Silk Loom.-- Since yankee ingenuity has discovered that silk fabrics can be woven in power looms, a very important improvement has been made and patented in England, in the application of steam power, and by dispensing entirely with weights. A number of these looms are now in operation in Manchester, and from the success which has attended the trial of them, it would appear that they are likely to supersede the imperfect machines now in use, as a weaver can turn out double the quantity, and at the same time produce a superior article.---*Ib.*

—

To keep off or drive away Bed Bugs.---Make a strong decoction of red pepper, when ripe, and apply it with a common paint brush to the joints of the bedstead, wainscoating, &c. where these insects resort, and it will kill or expel them.---*N. E. Farmer.*

—

Warm water for cows.---It has been said that cows will give more milk in cold weather, in consequence of having water which they drink made a little warm. ---*Ib.*

—

A method of making good butter from the milk of cows fed on turnips ---Let the vessels which receive the milk be kept constantly clean and well scalded with boiling water. When the milk is brought to the dairy, with every eight quarts mix one quart of boiling water, and then put it up to stand for cream.---*Hunter's Geological Essays.*

—

Antidote against Mice.---Mack Mackdonald, of Scalps, in the Hebrides, having some time ago suffered considerably by mice, put at the bottom, near the centre, and at the top of each of his stalks of grain, as they were raised, three or four stalks of wild mint, with the leaves on, gathered near a brook in a neighbouring field, and never after had any of his grain consumed. He then tried the same experiment with his cheese, and articles kept in store, and often injured by mice, and with equal effect, by laying a few leaves, green or dry, on the articles to be preserved.---*Farmer and Gardener.*

Caution to Sheep-Breeders.---Several instances having recently occurred in the neighbourhood of Higham, of lambs having died suddenly, it has been discovered, upon opening them, that it has been owing to their imbibing wool with their milk, and which may easily be prevented, by cutting off the loose wool near the teats of the ewes in due time.---*Yankee Farmer.*

Useful Invention.---The London Literary Gazette publishes an account of a pressing machine for peat, which must be of vast utility to Ireland and part of Scotland where this article is had in great abundance. It states that the machine was invented by Lord Willoughby de Ereasby, and it compresses the peet into a mass which renders it equal to all the purposes for which coal is used. For a long time attempts have been made to effect this desired object, and Lord Willoughby has, at last, overcome every obstacle, and by a very simple machine can convert the peat rapily into a combustible fit for all the uses of coal, and, in some cases, being devoid of sulphur, superior to that valuable substance. The peat is cut and pressed into a chamber, upon which a powerful weight is made to descend. The moisture, squeezed out, runs through vertical grooves, and is carried off, whilst every time the incumbent weight descends, knives pass through these grooves, and keep them clean for the next operation. At the bottom of the chamber a side is withdrawn, and the solid peat is precipitated to any convenient receptacle. Being dried for a very short period, it welds iron, and is fit for all that coal furnaces can do. Penknives have been manufactured in this way, and the success of the experiment demonstrated to be complete. Great national results are anticipated from the improvement: the prosperity of Ireland, and the amelioration of the north of Scotland, are its ready and obvious consequences.

American Silk Manufacture.—At the seed store of Mr. Robert E. Russell, the enterprizing proprietor of the flower garden, we had the pleasure of witnessing some samples of silk of American manufacture, which, in our estimation, equals, if they do not surpass, any of foreign growth. The silk worm and mulberry were raised in Columbia, and manufactured in Philadelphia, at the recently established manufactory of Messrs "Upton & Jackson, Silk Manufacturers and Thowsters, 21 Stampers Alley, between Second and Third, Pine and Lambard." We understand there are about thirty hands employed, and the only impediment in the way of complete success, is a due supply of the raw material. Such unequivoacl proofs of American ingenuity cannot fail to cheer every one who loves his country and rejoices in her prosperity. Mr. Russell also exhibited some fair samples of white and brown beet sugar.---*Columbia Hive.*

Great increase and consumption of the cotton crop in the United States.—The following statements taken from a recent publication, will convey some notion of the astonishing increase in the consumption of cotton, and of the wealth of which it is the source to the United States. When in addition to the facts here stated, the daily augmentation of the manufactures of the United States is considered, the value of cotton lands becomes almost inappreciable. The clothing of half the universe is no mean staple, particularly when that portion of the nation which cannot grow the material finds occupation for a great mass of its population in manufacturing or conveying it.

"No branch of manufacture has made such inconceivable progress in modern times as cotton weaving. This has not arisen from any protection of government, or from the uncertain and capricious acts of legislation, but from the nature of things, and the invectiveness and activity of manufactures. Cotton is cheaper to produce and easier to manufacture than flax, and has always, therefore, been for some purposes preferred. In Great Britain in the years

1787,	4,000,000	lbs. were spun.
1805,	19,000,000	"
1812,	61,000,000	"
1820,	137,000,000	"
1826,	162,000,000	"
1832,	273,000,000	"

The value of cotton goods amounted, in the year 1769, to about 200,000*l.*, now (official value) to 40,000,000*l.* In the year 1833, 237,000,000 lbs. were imported into England from North America:

From Brazil,	28,000,000 lbs.
From Turkey and Egypt,	987,000
From other countries,	1,696,000
From the English colonies,	35,000,000
North America exported in 1701,	189,000
1832,	322,000,000

The price of a pound of cotton wool varies from 4*s.* to 1*s.* 8*d.*; but has fallen considerably (like many other things) since 1816.

There are now 1154 cotton mills existing in England. Water-power to the amount of 10,000 horses, and steam-power to that of 30,000, are employed in them: 220,000 persons are directly, and one million and a half are indirectly, engaged in them. The seven counties in which the cotton manufactories are the most flourishing in the year 1753 contained only 791,000 inhabitants; in 1831 2,753,000. There were exported to

	Plain Cotton Goods.	Coloured Goods.
Russia,	2,750,000	272,000
Germany,	16,527,000	34,951,000
Italy,	34,000,000	13,000,000
Brazil,	36,000,000	23,000,000
Turkey,	15,000,000	3,000,000
China and East Indies,	35,000,000	16,000,000
North America,	13,000,000	18,000,000

—

Selecting Seed Corn.—Sir: In the Genessee Farmer of the 3d inst. I saw a method of selecting seed corn, which I approve as far as it goes; but from forty years practice I will state, that I invariably go into my field of corn before I harvest, and where I find two or more sound ears on a stalk, I take the top ear, which is always the largest and best filled. About twenty years since, I selected eighteen ears of the top, and eighteen of the next to the top ears, and traced them separate, labelled them, and the next spring planted them near together, and in the fall it was judged by different persons, that the top ears were from ten to twelve days earlier ripe. Yours, &c. J. H.

Lockport, Sept. 17, 1836. *Gen. Farmer.*

—

Vanack Cabbage.—This fine cabbage, which is but little known in this country, is deserving of extensive cultivation. It is not only extremely early, but it is a fine looking cabbage, and possesses the excellent qualities of tenderness and fine flavour. Seeds of this variety, sown on the 3d of June, came to full maturity early in August. We presented a fine head before the Massachusetts Horticultural Society last season, which was produced in our garden, in the hope that many of our market gardeners would be induced, from some notice they might take of it, to try it for an early crop, in preference to the early York or early Dutch; but from some cause it was only noticed as presented at a meeting of the Society, without scarcely any remarks in regard to its qualities. We hope another season that it will be more extensively cultivated. It is considered as one of the best in England, and from what we know and have seen of it, we can highly recommend it for its excellency.—*Conds. Am. G Mag.*

—

The Young Hyson Tea Plant.—We have received, through the kindness of the Rev. Mr. Storrs, of Walpole, a few seeds of the tea plant, of which so much has lately been said in the newspapers, and noticed by us. It is not the tea shrub of the Chinese, which produces very large seeds, but probably some indigenous herbaceous plant, and as far removed from the tea family as the common sage of our gardens. The appearance of the seeds is very much like the *prickly spinach.* We shall sow them in respect to the kindness of the donor, but for no other purpose than to show the ignorance of the person who could publish to the world the success he has experienced in propagating the tea shrub, when, in fact, it was no other than some wild plant, which the least botanical knowledge would have convinced him to the contrary.—*Ib.*

—

Pise Walls.—This is a kind of construction made by ramming clay in moulds, and suffering it to dry and harden. In warm climates they have been found very durable, but how they would answer in a climate where the frost operates with such a giant force as it does with us, is a question not easily answered without more experiments upon the subject. The Southern Agriculturist has some very interesting articles on this subject, from the pen of Bartholomew Carroll, Esq.; but we do not see among the directions any thing laid down in regard to the mixture or tempering the clay before it is used.

Will Mr. Carroll, or the Editor of the Southern Agriculturist go a little more into detail on that point? He will oblige us, as well as many others, if he will.—*Maine Farmer.*

[We would inform the writer of the above communication, that we are promised an article on the subject, and shall give it to the public at an early opportunity.—EDITOR.]